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ABBREVIATIONS

CHEMTREC	Chemical Transportation Emergency Center
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GAO	General Accounting Office
MTB	Materials Transportation Bureau
NRC	Nuclear Regulatory Commission
NTSB	National Transportation Safety Board

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REPORT BY THE

Comptroller General

OF THE UNITED STATES

COMPLETED

ORIGINAL

Programs For Ensuring The Safe Transportation Of Hazardous Materials Need Improvement

The Department of Transportation administers a program to protect the public from risks involved in the transportation of over 250,000 shipments of hazardous materials each day. The following improvements are needed to more effectively carry out this program.

--Obtain better data regarding the hazardous materials industry, improve DOT's hazardous materials information system, and better evaluate the risks associated with transporting these materials.

--Establish a systematic method for selecting companies for inspection, develop guidelines for determining when violations are to be developed into enforcement cases, and encourage States to expand their inspection and enforcement efforts.

--Improve coordination of emergency response efforts with local government organizations and industry associations and ensure better dissemination of information to local emergency organizations.

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NOVEMBER 4, 1980

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-200577

The Honorable Howard W. Cannon
Chairman, Committee on Commerce,
Science, and Transportation

The Honorable Wendell H. Ford
Chairman, Subcommittee on Consumer
Committee on Commerce, Science,
and Transportation

The Honorable Howell Heflin
United States Senate

As requested in your August 2, 1979, letter, we have evaluated the Department of Transportation's programs and efforts to promote the safe transportation of hazardous materials and the emergency response mechanisms available to react to hazardous material disaster situations.

We obtained comments from the Department of Transportation, the Environmental Protection Agency, the Federal Emergency Management Agency, and the National Transportation Safety Board. Each organization's comments have been considered in this report and copies of the comments have been included as appendixes.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Comptroller General
of the United States

B

COMPTROLLER GENERAL'S
REPORT TO THE COMMITTEE
ON COMMERCE, SCIENCE, AND
TRANSPORTATION
UNITED STATES SENATE

PROGRAMS FOR ENSURING THE SAFE TRANSPORTATION OF HAZARDOUS MATERIALS NEED IMPROVEMENT

D I G E S T

The Department of Transportation is responsible for ensuring the safety of the public from the inherent risks associated with transporting hazardous materials. Some 1,809 substances, including oil, gasoline, pesticides, chemicals, radioactive materials, and explosives have been designated as hazardous by the Department. These substances, if accidentally released, can pose risks to public health and safety and to property and the environment. An accident occurring in a populated area could be catastrophic.

The Department has done much to upgrade the Federal effort in recent years to better assure public safety in transporting these materials. However, the following improvements are needed to more effectively carry out its program.

MORE KNOWLEDGE IS NEEDED OF INDUSTRY SIZE AND RISKS ASSOCIATED IN TRANSPORTING HAZARDOUS MATERIALS

The Department does not have complete or accurate information on the volumes and types of hazardous materials shipped or the identity and locations of all firms involved in the hazardous materials industry. Without this information, the Department cannot effectively plan its inspection and emergency response activities. (See p. 10.)

The Department has not developed an information system that is complete or accurate, or which allows for comprehensive planning and analysis of the hazardous materials safety program. As a result, the Department can neither determine the extent of problems involved in transporting hazardous materials nor assure the Congress--and the American public--that it is using

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Tear Sheet. Upon removal, the report cover date should be noted hereon.

its limited staffing and funding resources efficiently and effectively. (See p. 16.)

The Department has not developed an overall program, or assigned specific responsibility within the Department, to evaluate all risks associated with transporting hazardous materials. Given its limited staff and data base, such a program may not be feasible at this time. However, these limitations should not preclude the Department from giving greater attention to certain aspects of risk evaluation. For example, risk profiles of carriers and shippers and selected route studies would be useful in planning inspection coverage, providing better information to response personnel, and evaluating the potential of accidents occurring during the transportation process. (See p. 29.)

GAO recommends that the Department:

--Establish a registration program to identify all hazardous materials carriers, shippers, and container manufacturers.

--Improve the completeness and accuracy of the hazardous materials information system.

--Develop risk profiles for carriers and shippers and develop a plan to study routes used to transport hazardous materials in highly populated areas. (See pp. 15, 25, and 32.)

FEDERAL AND STATE INSPECTION AND ENFORCEMENT EFFORTS SHOULD BE STRENGTHENED

The Department inspects only a minimal number of carriers and shippers each year primarily because of the small number of inspectors available compared to the large number of companies involved in manufacturing and transporting hazardous materials. (See p. 37.)

Although there are some State programs available to assist Federal inspectors in ensuring the safe transportation of hazardous materials, these programs are hampered by a lack of funds, trained enforcement personnel, and/or specific authority. (See p. 43.)

The Department does not have a program to identify those companies presenting the greatest risk to the public. Generally, selecting the companies for inspections is the responsibility of field inspectors. As a result, high-risk companies may not be selected for inspection to ensure compliance with the hazardous materials regulations. (See p. 51.)

GAO recommends that the Department:

--Work with the States to develop and implement comprehensive plans to expand their roles in enforcing hazardous materials regulations.

--Establish a system to identify high-risk companies needing inspection. (See pp. 50 and 53.)

BETTER COORDINATION AND TRAINING COULD ENHANCE EMERGENCY RESPONSE CAPABILITIES

There appears to be confusion concerning the assignment of responsibilities which hinders coordination between and among Federal, State, and local governments and private industry at the scene of hazardous materials accidents. (See p. 63.)

Also, there is no assurance that emergency response units are trained to effectively respond in the event of a hazardous materials incident. The Department has not established an adequate program to inform and educate personnel in emergency response organizations. (See p. 67.)

GAO recommends that the Department:

--Invite representatives of local governments and industry organizations to participate as full members of Regional Response Teams.

--Establish a program to assure that emergency response personnel are aware of available training and informational and educational materials. (See pp. 67 and 74.)

Tear Sheet

AGENCY COMMENTS AND GAO'S EVALUATION

The Department of Transportation, the Federal Emergency Management Agency, and the National Transportation Safety Board generally agreed with GAO's recommendations. The Environmental Protection Agency had no comments on GAO's specific recommendations. (See apps. I to IV.)

The Department of Transportation stated that while it agreed with much in the report, it objected to what it considered the unbalanced approach used to conclude that the Department's hazardous materials programs were inadequate without examining the efforts being taken to mitigate the problems noted.

GAO does not agree that an unbalanced approach was used in its review of the Department's hazardous materials programs. GAO identified and recognized in the report those efforts the Department is taking to improve its programs. GAO also identified areas where these programs can be improved and expanded to provide more efficient and effective management.

The Department of Transportation did not agree with GAO's recommendations that all hazardous materials shippers, carriers, and container manufacturers should be required to register; that shippers should be required to report hazardous materials incidents; and that risk profiles for carriers and shippers should be developed. The Department believed these recommendations would be too costly to implement and that risk profiles would constitute a Government "blacklist."

GAO believes that a registration program is necessary to obtain basic information on the hazardous materials transportation industry the Department is charged with regulating, that shippers must be required to report incidents to assure more complete and accurate reporting of hazardous materials incidents, and that risk profiles must be developed to identify those companies presenting the greatest risk to the public and needing compliance inspections. GAO believes the benefits that could be realized from implementing

these recommendations would offset any additional costs through more efficient and effective management of the hazardous materials program. (See pp. 15, 27, and 33.)

Other agency comments and GAO responses are on pages 50, 53, 57, 67, and 74.

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NRC	Nuclear Regulatory Commission
NTSB	National Transportation Safety Board

CHAPTER 1

INTRODUCTION

Transporting hazardous materials is a complex and sensitive issue. Hazardous materials are substances that, if accidently released, can pose risks to public health and safety and to property and the environment. Some 1,800 substances, including oil, gasoline, pesticides, chemicals, radioactive materials, and explosives have been designated as hazardous by the Department of Transportation (DOT).

Hazardous materials benefit the public in many ways. They provide heat and light for our homes, cure diseases, promote medical research, and improve food production. However, the increased volume of hazardous materials being transported through populated areas, and the increased possibility of an accident, have caused concern among the general public.

An accident involving hazardous materials in a populated area could be catastrophic. Many lives could be lost and the surrounding area destroyed. Our water, soil, or air could be contaminated and the health and well-being of people and wildlife could be adversely affected.

The question is, then, how do we transport hazardous materials as safely and economically as possible? Transporting hazardous materials would be relatively safe if they could be shipped through unpopulated areas. However, to maximize benefits and keep costs as low as possible, hazardous materials must be shipped through or near populated areas because that is where the best and most efficient transportation facilities are located, and the products used.

The American public's primary assurance of protection from the hazards associated with transporting these materials is the Federal program administered by DOT.

LEGISLATIVE AUTHORITY

DOT's basic authority for regulating hazardous materials is the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.), enacted January 3, 1975. The act gives the Secretary of Transportation regulatory and enforcement authority to adequately protect the Nation from risks to life and property inherent in hazardous materials transportation. Specifically, the act

--applies to interstate transportation of hazardous materials, intrastate transportation of hazardous materials to the extent it affects interstate transportation, and manufacturers 1/ of packages and containers used in transporting hazardous materials;

--permits DOT to require that container manufacturers and shippers and carriers of hazardous materials register with the Department;

--allows DOT to impose civil penalties for violations committed by carriers, shippers, and container manufacturers;

--authorizes criminal sanctions for willfully violating hazardous materials regulations; and

--authorizes DOT to establish criteria and issue regulations promoting the safe handling and transportation of hazardous materials.

Other Federal laws that provide coverage of hazardous materials transportation include the (1) Transportation of Explosives Act (18 U.S.C. 831-835), (2) Federal Aviation Act of 1958 (49 U.S.C. 1301 et seq.), and (3) Dangerous Cargo Act (46 U.S.C. 170). Authorities and responsibilities under these acts were transferred to DOT by the Department of Transportation Act (49 U.S.C. 1651 et seq.).

The Transportation of Explosives Act provided regulatory authority over highway and rail shippers and carriers of hazardous materials. 2/ The Federal Aviation Act of 1958 provided authority to set safety standards for hazardous materials transported by air. The Dangerous Cargo Act provided authority to set safety standards for transporting explosives and other dangerous articles or substances in the navigable waters of the United States.

1/Includes any person who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified, or sold by such person for use in transporting certain hazardous materials (hereafter referred to as container manufacturer).

2/The Transportation of Explosives Act was repealed November 30, 1979, by Public Law 96-129. The regulatory authority provided by that act is now covered under the Hazardous Materials Transportation Act.

ORGANIZATION AND RESPONSIBILITIES

DOT's hazardous materials regulatory program is divided among five administrations: the Materials Transportation Bureau (MTB), Research and Special Programs Administration; the United States Coast Guard, the Federal Highway Administration (FHWA); the Federal Aviation Administration (FAA); and the Federal Railroad Administration (FRA). Each is responsible for a different segment of the hazardous materials transportation industry. MTB regulates container manufacturers' operations and intermodal transportation, while FHWA regulates highway transportation; FAA, air; FRA, rail; and the Coast Guard, water.

MTB and the four modal agencies share responsibility for enforcing hazardous materials regulations found under title 49 of the Code of Federal Regulations. Regulations are enforced through the inspection of industry operations and compliance or enforcement actions taken against violators.

MTB is also responsible for coordinating the efforts of each administration to provide a comprehensive oversight of the hazardous materials transportation industry. Other responsibilities include (1) developing and issuing regulations and exemptions that govern intermodal hazardous materials transportation and container manufacturers, (2) with assistance from the modal administrations, developing and issuing regulations and exemptions pertaining to single transportation modes, except for those regulations governing bulk shipments by water, (3) performing training and education activities relating to the various methods of transporting hazardous materials, and (4) establishing regulations for safe handling of hazardous materials being transported.

Under title 46 of the CFR, the Coast Guard is responsible for regulating bulk shipments of hazardous materials by ships and barges in the navigable waters of the United States and the storage of hazardous materials in port areas. The Coast Guard issues and enforces regulations applicable to (1) bulk transportation of hazardous materials by water and (2) the design, construction, and operation of ships and barges used in transporting hazardous materials in bulk.

In addition, the Coast Guard, in cooperation with the Environmental Protection Agency (EPA), is the focal point for Federal emergency response activities. As such, it operates the National Response Center and receives

initial reports of discharges of oil and hazardous substances and materials and notifies the appropriate officials for action.

OBJECTIVES, SCOPE, AND METHODOLOGY

The purpose of this review was to provide the Congress with an assessment of DOT programs to promote the safe transportation of hazardous materials. 1/ Based on an August 2, 1979, request from the Senate Committee on Commerce, Science, and Transportation and subsequent discussions, we evaluated:

1. The actual and potential problems in transporting hazardous materials; the extent to which problem areas are being identified through DOT's management information system; the completeness and accuracy of DOT's system; and the extent it is used to evaluate the risks associated with transporting hazardous materials.

2. The extent of DOT's inspection efforts, enforcement actions, and training programs in minimizing the potential problems and risks involved in transporting hazardous materials.

3. The role played by the States in the inspection, enforcement, and education efforts associated with transporting hazardous materials and the prospects for increasing the States' role.

4. The organization of the Federal emergency response mechanism and the extent to which it is coordinated with State and local groups involved in emergency response activities and provides training and information to those organizations.

1/The review did not include the transportation of hazardous materials by pipeline which was the subject of one of our earlier reports to the Secretary of Transportation entitled "Pipeline Safety--Need For A Stronger Federal Effort," (CED-78-99, Apr. 26, 1978). In addition, we have published other reports dealing with transporting and storing specific hazardous materials. These include "Federal Actions Are Needed To Improve Safety And Security Of Nuclear Materials Transportation," (EMD-79-18, May 7,1979); "Federal Facilities For Storing Spent Nuclear Fuel--Are They Needed?" (EMD-79-82, June 27, 1979); and "Liquefied Energy Gases Safety," (EMD-78-28, July 31, 1978).

To obtain a comprehensive picture of DOT's hazardous materials program, we reviewed the five administrations having responsibility for hazardous materials transportation. We also reviewed DOT's field activities in nine States--Alabama, Arkansas, Georgia, Kentucky, Louisiana, Maryland, Nevada, Pennsylvania, and Texas. These States were selected because of the range of hazardous materials incidents occurring within their boundaries, the presence of major transportation activities within the States involving the five administrations, and their geographic coverage.

At DOT headquarters in Washington, D.C., we reviewed DOT's policies and procedures and examined pertinent legislation, documents, reports, and records relating to the transportation of hazardous materials. In addition to interviewing DOT officials, we talked with officials at the Departments of Agriculture, Commerce, Defense, Energy, the Interior, Justice, State, and Health and Human Services; the Council on Environmental Quality; the Federal Emergency Management Agency (FEMA); the National Transportation Safety Board (NTSB); and EPA. We talked with these officials to determine their involvement in the hazardous materials area and the Federal emergency response program. We also contacted 24 industry and State organizations to obtain information on the size of the hazardous materials industry.

We visited field offices for each of the modal agencies that are responsible for DOT's hazardous materials program in the nine selected States. We interviewed regional and district managers, inspectors, and other responsible officials to obtain information about program planning, inspection and compliance coverage, and related data. We also interviewed responsible officials in the nine States to obtain information relating to their relationship with DOT and their activities in the hazardous materials area. In addition, we arbitrarily selected 11 local communities to visit to determine their role in responding to emergencies involving hazardous materials and the extent of training and informational material received from DOT.

Further, through talks with DOT officials and reviews of pertinent documents, we determined DOT's progress in implementing recommendations made by DOT's Hazardous Materials Transportation Task Force in its September 1978 report. The task force recommended (1) expanding the capability of the National Response Center, (2) developing a centralized hazardous materials information system, (3) conducting a study to determine whether criminal and civil penalties

assessed against violators are consistent, and (4) designing training programs to aid local emergency response personnel during hazardous materials accidents and expanding the coverage of the emergency action guide. Our comments on DOT's progress in implementing these recommendations are included in other sections of this report.

CHAPTER 2

NEED FOR BETTER IDENTIFICATION OF PROBLEM AREAS IN TRANSPORTING HAZARDOUS MATERIALS

The Hazardous Materials Transportation Act requires DOT to (1) establish and maintain sufficient facilities and staff to evaluate risks in transporting hazardous materials and (2) conduct a continuing review of all aspects of transporting hazardous materials to determine and recommend appropriate steps to assure its safe transportation. However, a lack of information within DOT hampers its ability to meet the requirements of the act.

Specifically, DOT needs to

--obtain more definitive information about the hazardous materials transportation industry,

--improve and expand the input to its hazardous materials information system, and

--evaluate the overall risks associated with transporting hazardous materials.

HAZARDOUS MATERIALS TRANSPORTATION-- DOES IT NEED INCREASED ATTENTION?

Transporting hazardous materials requires continuous vigilance if the potential risks to the public are to be minimized. Increased attention is necessary because of (1) the increased use of hazardous materials, (2) the effect of deregulation within the transportation industry, (3) the declining railroad track conditions, and (4) the lack of complete data on the volume of hazardous materials transported and the increasing number of accidents, deaths, and injuries.

The volume of hazardous materials transported continues to grow. While exact volumes are unknown, it is estimated that over 250,000 shipments per day are moved through the transportation network in the United States, and the total is expected to double in the next decade.

The release of hazardous materials as a result of accidents will occur in spite of the best possible enforcement programs, safety devices, and awareness of the hazards

of transporting these materials. Since 1971 the incidents, 1/ deaths, injuries, and property damages reported to DOT were as follows:

	Incidents	Deaths	Injuries	Property damage (millions)
1971	2,255	23	253	$ 6.6
1972	4,328	12	294	9.3
1973	6,002	21	509	7.4
1974	8,428	32	903	21.3
1975	10,769	27	655	7.1
1976	11,889	18	820	8.0
1977	15,950	32	749	16.5
1978	18,022	46	1,130	18.1
1979	17,524	18	941	14.7

We believe these figures understate the problem because not all incidents are reported, and, for those which are, the information is not always complete or accurate. This occurs as a result of noncompliance with reporting requirements as well as the lack of comprehensive reporting requirements under current regulations. (See p. 16.) The Chairman, NTSB, stated in April 1980 that the nature of some hazardous materials shipments is such that a single catastrophic accident could change the statistics overnight.

These figures indicate a good safety record in comparison to such statistics as automobile deaths. They do hide the potential, however, for a catastrophic accident. For example, a worst-case estimate was made that a major radioactive release in New York City could result in 3,300 deaths and a decontamination cost of more than $2 billion. Another study showed that 18,000 city residents could be killed by an accident involving just one tanker of chlorine.

1/An incident is any unintentional release of hazardous materials, or suspected contamination by radioactive materials or etiologic agents (live micro-organisms, or their toxins, which cause or may cause human disease).

Over the past several years, newspaper articles have reported incidents involving the transportation of hazardous materials which have resulted in evacuations, deaths, injuries, or property damage. In many situations, had the accident occurred in a different location, at a different time, or under different weather conditions, the consequences could have been much more disastrous.

Accidents involving hazardous materials can happen any place at any time. For example, in April 1979, 29 railcars, including 26 placarded tank cars containing hazardous materials, derailed near Crestview, Florida. Fourteen cars containing acetone, methyl alcohol, chlorine, carbolic acid, and anhydrous ammonia ruptured and burned. A cloud of chlorine and anhydrous ammonia formed and threatened a 300-square mile area downwind. More than 4,500 persons were evacuated as the released hazardous materials posed a threat for 9 days. Fourteen persons were injured and property damage was estimated at $1.3 million. Fortunately, no deaths resulted from this accident.

Another incident, which did result in deaths, involved a train derailment in a sparsely populated area near Youngstown, Florida, in February 1978. The train carried chlorine, liquid propane gas, oil, caustic soda, and other hazardous and nonhazardous materials. When the train derailed, one chlorine tank car was punctured and released its contents resulting in 8 deaths, 138 injuries, and over $1 million in property damage. The results could have been worse if these accidents had occurred in densely populated areas.

Another example of an incident involving chlorine which could have resulted in many deaths and injuries had the location, wind direction, or other factors been different was the derailment of a train in Mississauga, Ontario, in November 1979. The train was carrying more than 70 tons of chlorine gas which began to leak. More than 200,000 residents in 60 square miles were evacuated because officials feared that explosions or intense heat from burning tank cars of propane gas would cause the chlorine tank cars to rupture completely, thereby engulfing the city in one large deadly cloud of poisonous gas. Fortunately, the evacuation was successful and no deaths occurred. However, many residents were unable to return until 6 days after the derailment.

In addition to the concern over the increasing volume of hazardous materials being transported, there is concern that other areas need increased attention. Some Federal inspectors and other officials are concerned that deregulation of the trucking and airline industries will permit many more

companies to enter the market, thereby raising the possibility of inadequate maintenance of equipment, as companies try to reduce costs to meet competition. In addition, inspection coverage will be reduced as more companies enter the industry without a corresponding increase in inspection staff. Serious concerns also exist over deteriorating track conditions in the rail industry. These conditions increase the potential for train derailments and resulting incidents involving hazardous materials.

We believe there is a need for increased attention regarding the transportation of hazardous materials. As the volume of transported hazardous materials increases, Government and industry must take measures to assure that the risks of accidents are minimized wherever possible.

NEED FOR MORE DEFINITIVE INFORMATION ABOUT THE HAZARDOUS MATERIALS INDUSTRY

Neither MTB nor any of the four modal agencies (FRA, FAA, FHWA, or the Coast Guard) know how much hazardous materials are shipped each year. Further, they do not know the total number, size, or location of firms involved in the industry, or the types of hazardous materials manufactured and transported by these firms. Although MTB and the modal agencies have developed some of this information, it is far from complete, and no specific DOT requirement exists to develop a system to obtain the complete information. As a result, planning of compliance inspections and preparing for emergency situations is less than optimal.

Lack of adequate data on the size and growth of the industry

DOT estimates that about 4 billion tons of hazardous materials are shipped each year. Although this estimate has been widely quoted, MTB officials do not have documents to support this estimate. An MTB official stated that the 4-billion ton estimate was derived from information provided previously by various industry sources and included shipments of petroleum products, chemicals, and caustic materials.

We contacted 24 industry and State organizations and associations to obtain any information they had on the volume of hazardous materials shipped. Although both government and industry officials stated that the hazardous materials industry is growing, only a few organizations could provide us with information. For example, the Association of Oil Pipe Lines reported that in 1977, about 1,089 million tons of crude petroleum and petroleum products were transported domestically by the highway, water, and rail modes.

This compares to only about 896 million tons carried in 1970--a growth of 22 percent.

Another aspect of the hazardous materials industry is the generation of hazardous wastes. EPA estimates that the volume of hazardous wastes increases 4 to 6 percent each year. According to EPA some 56 million metric tons are currently produced each year.

Other information reflecting growth of volumes of hazardous materials is developed by the Nuclear Regulatory Commission (NRC) and the Army Corps of Engineers. NRC estimates that over 2 million packages of radioactive materials are shipped each year, and that by 1985, radioactive materials shipments will more than double to about 5.5 million packages annually. The Corps provided information showing that the shipment of chemicals by water increased from 67 million tons in 1975 to 78 million tons in 1977--a 17-percent increase.

In summary, although various organizations have some data on hazardous materials produced or shipped, an accurate estimate of the total volume of such materials shipped each year does not exist.

Lack of knowledge about the number of firms involved

DOT does not know how many firms are involved in the hazardous materials industry. Estimates of the total number of hazardous materials shippers, carriers, and freight forwarders have not been developed. Further, DOT does not know the size of the firms involved or the locations of all principal offices, operating terminals, or shipping points.

DOT has estimated that (1) about 21,000 manufacturers provide containers used in transporting hazardous materials, (2) shipments in portable containers originate from 100,000 locations, (3) bulk shipments originate from 4,370 locations, (4) about 600,000 vehicles and vessels are used to transport hazardous materials in bulk, and (5) about 700,000 vehicles and vessels are used to transport portable containers. However, DOT had no documents to support these estimates, which have been widely circulated. According to an MTB official, these estimates were developed when representatives from DOT concerned with hazardous materials met and used their knowledge to make a best guess.

MTB and the modal administrations have developed a partial listing of firms involved in the hazardous materials industry. FHWA, for example, developed a list of about 10,700 shippers and 11,700 carriers that ship hazardous

materials by highway. However, FHWA does not have a comprehensive program to identify all such carriers and shippers, and it appears that the list is incomplete. For example, FHWA officials in one region estimated that as many as 2,000 carriers were not listed and from 500 to 1,000 shippers were not shown in that region alone. The number of these carriers transporting hazardous materials is unknown.

FHWA's list was developed in a random manner. The names of shippers and carriers were obtained during safety inspections, accident investigations, roadside checks of drivers and trucks, by word of mouth, or from observations by FHWA personnel. In addition, although the list included the address of the principal office of the shippers and carriers, it did not include their operating terminals. Many hazardous materials carriers and shippers have several terminals, sometimes located in different parts of the country. It is at these terminals that hazardous materials are received and/or shipped.

The Coast Guard has developed a computer system containing information on 54,000 vessels, many of which carry hazardous materials to and from U.S. ports. The Coast Guard told us that they had not developed a list of shippers and freight forwarders.

MTB has developed a list of about 4,100 container suppliers through its registration program. Manufacturers of certain containers such as steel cylinders and polyethylene drums 1/ and all firms that recondition and test containers are required to register with MTB. Other container manufacturers, such as manufacturers of fiberboard and plywood boxes, are not required to register because MTB has not believed it necessary for improved safety.

Although FRA officials are generally aware of rail carriers, they have not compiled lists of all carriers, nor of inspection points. (An inspection point is a railroad yard, terminal, or other facility.) For example, one inspector listed six inspection points for a major carrier in one State. However, talks with the carrier disclosed that a total of 112 inspection points existed in the State. FRA also does not maintain a comprehensive list of shippers of hazardous materials. Although the FRA hazardous materials inspectors we spoke to generally had lists of shipper inspection points, they readily acknowledged that the lists

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1/DOT exempted manufacturers of these containers whose specifications were approved before 1968.

were made from personal knowledge, and were incomplete, and that the total number of hazardous materials shippers in their inspection areas was unknown.

FAA does not maintain a list of hazardous materials carrier operating locations. FAA knows which carriers are authorized to carry hazardous materials; however, they do not know which ones actually carry hazardous materials, the type and volume carried, or where the materials are carried. Moreover, FAA does not maintain a list of freight forwarders or shippers and the number involved in transporting hazardous materials is unknown.

As a result DOT has limited knowledge about the hazardous materials transportation industry it is charged with regulating. Because complete information has not been developed, DOT cannot effectively plan its inspection and emergency response activities (see chs. 3 and 4). Further, DOT may not be inspecting those firms presenting the greatest risks based on the type and volume of hazardous materials shipped. Information on the number of firms involved, types and volumes shipped, and locations of terminals is needed as a management tool.

One way to obtain the information needed would be to require all firms involved in the hazardous materials transportation industry to register with MTB. DOT's Hazardous Materials Transportation Task Force, in its September 1978 report, recognized the need for a registration program. The task force stated that a registration program could aid in scheduling and allocating resources for inspections and could also facilitate the development of industry profiles. However, MTB has not acted on this observation because it does not believe a registration program is necessary to improve safety.

The authority for requiring registration already exists. Section 106(b) of the Hazardous Materials Transportation Act permits the Secretary of Transportation or his designee (MTB) to require such registration. The act further states that such a program should require the person's name, the locations of principal place of business and operating facilities, and types of hazardous materials shipped or transported.

MTB has already exercised this authority to a limited extent. As discussed on page 12, MTB requires certain container manufacturers to register. Also, FHWA requires carriers to register those cargo tanks which are authorized for bulk shipments of compressed gases by highway. In addition, in March 1979, MTB proposed regulations to require shippers of flammable cryogenic liquids in portable tanks, cargo tanks,

or tank cars to register with DOT. The registration program would enable MTB to determine who ships cryogenic liquids, where their facilities are located, and the number and types of transportation vehicles used. MTB plans to use this information in determining its inspection activities.

MTB has not conducted economic analysis studies to determine how much the existing registration program has cost or how much the proposed program will cost. An MTB regulatory official estimated that the cost to industry would be negligible since no forms are required. The information required will be submitted on each company's letterhead and should require little preparation time.

EPA is also developing information on transporters of hazardous waste materials. The Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.) requires that anyone generating or transporting hazardous wastes or anyone owning or operating a hazardous waste facility must notify EPA (or States having authorized waste permit programs) of their activity. In May 1980 EPA issued final rules, effective November 19, 1980, establishing procedures for these firms to file a notification of hazardous waste activity. Although it is not technically a registration program, it will give EPA and the public a picture of hazardous waste activity regulated under the act. EPA has identified about 400,000 individuals, businesses, and Federal agencies that may be required to file a notification form.

In addition to EPA, other Federal agencies, including NRC and the Federal Maritime Commission, also have information available on certain elements of the hazardous materials transportation industry.

Conclusions

DOT does not have complete or accurate information on the volume of hazardous materials shipped or the growth of that volume; the type of hazardous materials shipped; and the identification and location of firms involved in the hazardous materials transportation industry. Given the size of the hazardous materials industry and DOT's lack of knowledge in this area, a registration program for all hazardous materials shippers, carriers, and container manufacturers is needed to develop the kinds of information DOT needs to regulate the industry and adequately manage its hazardous materials program to protect the public during the transportation of such materials.

DOT's position that an expanded registration program would not improve safety raises questions about how DOT

can effectively plan its inspection and emergency response activities, as discussed in chapters 3 and 4, without knowing the size and locations of the industry it is charged with regulating. Further, developing this information would enhance DOT's rulemaking efforts by providing the statistics needed to assess the scope and effects of DOT regulations and serve as a means of keeping the industry current on regulatory and compliance information.

To prevent unnecessary duplication, DOT needs to coordinate with other Federal agencies having information on the hazardous materials transportation industry which would be useful in developing a registration program.

Recommendations

We recommend that the Secretary of Transportation require the Director of MTB to establish a registration program for all hazardous materials carriers, shippers, and container manufacturers, as authorized by section 106(b) of the Hazardous Materials Transportation Act. We further recommend that, to prevent unnecessary duplication, the Director coordinate the DOT registration program with other Federal agency programs having information on the hazardous materials transportation industry and gain access to that information which would be useful in developing a registration program.

Agency comments and our evaluation

DOT

In a August 20, 1980, letter (see app. I), DOT, although agreeing that a universal registration program would provide the Department with a better data base to manage its hazardous materials program, believed that such a program would be too costly to implement, that existing resources would not support such a program, and that such a program would not be feasible under the Administration's current paperwork reduction policies.

Although we recognize that a total registration program would result in some additional costs for the Department in the short run, we believe such costs would be minimal because administering such a program would primarily be a clerical task, easily adaptable to computerization. Further, we believe that the cost to industry of such a program would be negligible in that the information required should require little preparation time. We believe the benefits that could be realized from having complete and accurate information on the hazardous materials community DOT is charged with regulating would offset the costs of such a program through more

efficient and effective management of the hazardous materials program.

FEMA

FEMA, in a August 18, 1980, letter (see app. II), supported the registration of hazardous materials shippers, including the identification of operating facilities and the materials shipped, even though it believed the required data base would be large and difficult to keep current and manage. The agency stated the information would be valuable in the development of response plans and the strategic location of State and local response teams and equipment, as well as in the planning of inspection activities.

NEED TO IMPROVE AND EXPAND THE INPUT TO DOT'S HAZARDOUS MATERIALS INFORMATION SYSTEM

A complete and accurate management information system is essential in planning and conducting an effective and efficient hazardous materials transportation safety program, as well as in evaluating the program. The existing system, however, is neither complete nor accurate. As a result, DOT can neither determine the extent of the problems involved in transporting hazardous materials, nor assure the Congress--and the American public--that it is using its limited staffing and funding resources efficiently and effectively.

Data that should be submitted by the regulated industry

Carriers that transport hazardous materials are required to submit written reports to MTB within 15 days following an incident involving the transportation of hazardous materials (including those incidents occurring during loading, unloading, or temporary storage). These reports are the primary source of information regarding hazardous materials incidents, casualties, and associated property damage. However, certain problems exist with the incident reporting system.

Incidents not included in the system

MTB is not receiving reports on all incidents involving the transportation of hazardous materials because MTB relies on the carriers to voluntarily report incidents. Furthermore, the regulations do not require all firms involved in transporting hazardous materials to report incidents. As a result, MTB statistics do not accurately reflect the problems which exist in the hazardous materials transportation industry.

Although no study has been done to determine how many reports MTB should be receiving, indications are that not all required reports are being submitted. According to MTB statistics, only 65 air carriers, 1,272 highway carriers, 84 railroads, 56 water carriers, and 18 freight forwarders have ever submitted incident reports since they were first required in 1971. Although the exact number of firms subject to regulation is not known, MTB believes that only a small fraction of the firms which transport hazardous materials have reported incidents. In view of the small number of firms that have reported, MTB notes that it is likely that only a small portion of reportable incidents are actually being reported.

For example, the 1,272 highway carriers that have reported hazardous materials incidents since 1971 represent only about 11 percent of those that FHWA identified as carrying hazardous materials. Also, this percent is overstated to the extent that the number of carriers identified as carrying hazardous materials may be seriously understated.

Another problem noted with the reporting system is that the regulations (CFR 49) require only carriers to report hazardous materials incidents. Thus, only companies involved in carrying hazardous materials are required to submit reports. Companies involved in other aspects of transportation--defined by the Hazardous Materials Transportation Act as not only the actual movement of hazardous materials but also the loading, unloading, or storage incidental thereto--such as shippers and freight forwarders are not required to submit hazardous materials incident reports. As a result, not all hazardous materials incidents occurring in the total transportation network are being reported.

Following are two examples of incidents which occurred at shipper facilities during the transportation process but were not reported to MTB. In July 1973 at Kingman, Arizona, a railroad tank car loaded with liquefied petroleum gas exploded while being unloaded, killing at least 13 persons and seriously injuring 80. In June 1979 at Verdigris, Oklahoma, a railroad tank car being loaded with ammonia exploded, killing two persons.

In addition, although MTB requires reports on incidents involving packaged hazardous materials shipped by water, they are not required for incidents involving hazardous materials shipped in bulk by water. This understates MTB's report showing the number of hazardous materials incidents occurring in the water mode as well as the number of casualties and amount of property damage attributable to them.

MTB's incident reporting system shows that, since 1971, only 196 hazardous materials incidents have been reported in the water mode. These 196 reports, applicable only to incidents involving packaged hazardous materials, show no deaths, 82 injuries, and $1.6 million in property damage. Not included in these statistics which are reported to the Congress are incidents involving bulk shipments by water such as the following:

--In September 1979 an oil tanker docked in the Houston ship channel exploded, leaving three men dead and nine injured.

--In April 1979 on the Neches River in Texas an oil tanker was struck by lighting and exploded, leaving one man dead and 32 injured.

Finally, although the Hazardous Materials Transportation Act provides DOT with regulatory authority over not only interstate commerce but also intrastate commerce which affects interstate commerce, DOT has not elected to regulate firms involved in only intrastate transportation, or require them to submit hazardous materials incident reports. Thus, DOT's statistics on hazardous materials incidents are further understated, and DOT is not aware of the extent of problems which may exist in the intrastate transportation area.

To obtain a general view of MTB's incident reporting system, we selected from various news reports 30 incidents which occurred between February 1976 and November 1979 and requested from MTB copies of the associated hazardous materials incident reports. These 30 incidents, all involving releases of hazardous materials, were selected to include all modes of transportation; storage, loading, and unloading incidents, as well as actual in-transit incidents; and various degrees of seriousness.

Of the 30 incidents, MTB had received incident reports for only 12, leaving 18 unreported. According to the news reports, these 18 incidents resulted in 18 deaths, 9 persons missing, at least 187 injuries, and unknown losses and/or property damage. One incident which was not reported occurred in Louisiana in December 1978. A truck carrying ammonia collided with a train, spreading toxic fumes over a mile-wide area, leaving 3 persons dead, 25 injured, and 300 forced to evacuate.

Three of the 18 incidents, resulting in 4 deaths, 3 persons missing, and 20 injuries, involved the bulk transportation of hazardous materials by water and therefore were not required to be reported to MTB. MTB was not able to tell

us for certain why reports were not received for the remaining incidents. No matter what the reason, however, the point remains that MTB's incident reporting system does not accurately reflect the extent of the problems associated with transporting hazardous materials.

Incident reports not complete or accurate

The incident reports the carriers submit are not always complete or accurate. MTB has not made a formal study to determine their completeness or accuracy, but acknowledges that many reports are deficient, particularly regarding container information and damage estimates. As a result, MTB and the Congress cannot accurately determine the extent of the problems associated with transporting hazardous materials and cannot make the necessary resource and funding decisions to resolve these problems.

When reports are received, they are reviewed, but the reported data is not questioned unless it appears to be completely illogical. MTB pointed out that evaluating the accuracy of the report is difficult because the only information available on most of the incidents is that which is reported by the carriers.

Carrier estimates of losses and/or property damage are particularly questionable. Neither the incident form nor MTB's guide for preparing the form provide instructions or criteria for developing the estimates. The incident form simply requests that the estimated "* * * loss and/or property damage including cost of decontamination" be reported.

According to MTB, carrier estimates may include only the value of the lost commodity, freight damage claims, and the costs of decontamination. They usually do not include, nor are there specific instructions to do so, many other substantial cost items which result from accidents involving hazardous materials. These items include the costs of evacuations, business disruptions, environmental damage, emergency response, traffic reroutings, death/injury claims, and damage to surrounding property.

We also noted that, although MTB states that every hazardous materials spill must cause some loss--even if it is only the cost of the clean-up and/or the lost material--nearly one-third of the 95,167 incident reports received in the 9-year period 1971-79 showed "0" or provided no estimate of losses. MTB further pointed out that the reports for the more serious incidents frequently indicate that the damage is unknown. In these cases, no damage estimates

are entered into MTB's reporting system and no updated reports are required if more information becomes available.

For example, in February 1978 in Waverly, Tennessee, a railroad tank car loaded with propane exploded in the downtown area 2 days after the train had derailed, leaving 16 persons dead, 43 injured, and 2 downtown city blocks destroyed. The incident report the carrier submitted to MTB did not provide an estimate of damages, noting instead that the damage estimate was "under investigation." Subsequently, NTSB investigated this incident and estimated property damage at $1.8 million and noted that more than $50 million in legal claims had been filed.

MTB also acknowledges that if damage estimates are given, they often appear to be only crude estimates. To illustrate the disparity between damage estimates shown on the carrier incident reports and NTSB estimates, which are based on its investigations of the incidents, we compared the following five major incidents involving hazardous materials.

Accident site	Date	Damage estimate as reported to MTB	NTSB damage estimate
		(millions)	
East St. Louis, Ill.	1/22/72	$ 0.685	$ 7.500
Decatur, Ill.	7/19/74	7.500	18.000
East Houston, Tex.	9/21/74	1.671	13.000
Lewisville, Ark.	3/29/78	0.125	2.189
Crestview, Fla.	4/8/79	0.136	1.259
Total		$10.117	$41.948

One reason given by MTB's Acting Chief, Safety Data Management Branch, for receiving incident reports with no property damage estimates or with questionable estimates may be the short time carriers are allowed to submit such reports. Requiring reports to be submitted within 15 days following an incident does not always provide sufficient time for more accurate reporting.

We also noted that the incident reports submitted by the carriers may be understating the casualties resulting from these incidents. For the same 5 incidents, the carriers reported a total of 8 deaths and 369 injuries, whereas NTSB noted 8 deaths and at least 831 injuries.

Two of the incidents--East St. Louis and East Houston--accounted for the major difference. In the East St. Louis incident, the carrier reported 4 injuries whereas NTSB noted at least 230. In the East Houston incident, the carrier reported 15 injuries compared to 235 reported by NTSB.

Reasons for the large discrepancies appear to be the fact that MTB relies on carrier reports made within 15 days after an incident and requires reporting of only those injuries which require hospitalization. NTSB, on the other hand, counts all injuries sustained as the result of the incident which involve medical treatment, whether or not they require hospitalization, and collects its data months after the incident, allowing for more complete and accurate data collection.

Internally generated and/or compiled data

The Hazardous Materials Transportation Act requires the Secretary of Transportation to conduct a continuous review of all aspects of hazardous materials transportation. The act also requires the Secretary to submit to the President, for transmittal to the Congress by May 1 of each year, a comprehensive report on the transportation of hazardous materials during the preceding calendar year. This report must include, among other things, (1) a thorough statistical compilation of accidents and casualties involving the transportation of hazardous materials and (2) an evaluation of the effectiveness of enforcement activities and the degree of voluntary compliance with applicable regulations.

As noted below, DOT has only recently begun developing an information system which if implemented should allow for comprehensive program planning and analysis. In addition, some of the program information which has been published appears to be incomplete or misleading.

Lack of a centralized data collection and analysis system

Before the Hazardous Materials Transportation Act was enacted in 1975, hazardous materials regulatory authority was divided among the modal agencies in DOT. Each of the agencies independently developed criteria reflecting their particular needs for data collection and analysis. A wide range of hazardous materials reporting systems evolved which resulted in substantial duplication, inconsistencies in definitions and coverage, and reporting gaps. Using these largely uncoordinated systems for national, multimodal and crossmodal

analysis and reporting, and for evaluating regulations and other internal DOT decisionmaking processes, has proved to be difficult and inefficient.

DOT's Hazardous Materials Transportation Task Force, in its September 1978 report, recognized that the existing information systems were inadequate for comprehensive program planning and analysis. Noting the Secretary's mandate to conduct a continuing review of all aspects of hazardous materials transportation and lacking the data on which to base such a review, the task force recommended that a centralized hazardous materials information system be established in DOT to collect and analyze hazardous materials program information. The task force added that such a centralized system would become the basis for DOT's hazardous materials program planning, regulatory, and compliance efforts and for assessing the progress of its efforts.

In August 1979 a DOT contractor completed a preliminary requirement analysis study for a proposed hazardous materials information system. The study report identified the objectives of a hazardous materials information system and the problems in the existing information system. It also proposed solutions to those problems. The report pointed out both the incompleteness of certain data items, such as commodity flow data and historical data on the safety and compliance records of carriers and shippers, and the failure to use available data to improve resource planning and evaluation. The study proposed a new information system together with possible output reports and their areas of use.

A second study, conducted under contract and completed in September 1979, established a multiyear program plan for the proposed hazardous materials information system. The plan described an approach that follows two paths toward meeting system goals and objectives. The first path, to be completed by the end of fiscal year 1983, involves improving current hazardous materials-related data bases, reporting systems and analytical capabilities through agreements between DOT's Transportation System Center and the appropriate DOT operating administration. The second path, to be completed by the end of fiscal year 1982, involves exploring the design and development of an integrated hazardous materials information system that will efficiently and effectively satisfy the information requirements of all affected DOT agencies.

Incomplete or misleading program data

DOT's annual report to the President and to the Congress on the transportation of hazardous materials does not indicate accurately the extent of the problems associated with transporting these materials or the level of effort the Department expends on its program. In addition, the report does not, as required by law, provide an evaluation of the Department's enforcement program.

Because MTB is not receiving reports on all incidents involving the transportation of hazardous materials and reports that are received are not always complete or accurate, DOT's annual report understates the extent of the problems associated with transporting hazardous materials.

We also noted that although the annual report understates the seriousness of the problems resulting from transporting hazardous materials, it overstates the level of effort DOT expends combating these problems, particularly in the area of inspections and investigations. In this regard, the annual report provides tables showing the number of hazardous material inspections and investigations conducted during the calendar year and the number of inspectors available for this function. We noted a number of instances which raise serious doubts about the credibility of the figures reported.

For FRA, the method used to tabulate hazardous materials inspections allows for inflated inspection counts. We noted that when more than one inspector conducts a hazardous materials inspection, each participating inspector receives credit for the inspection and the total number of railcars inspected. This results in duplicate inspection counts. For example, the records in one region indicated that 175 hazardous materials inspections were conducted in calendar year 1978. Review of the individual inspection reports, however, disclosed that only 139 inspections were actually conducted and that 27 of these, or 19 percent, involved more than one inspector. Duplicate counting of these inspections resulted in an overcount of total inspections by 36, or 26 percent.

We also noted that the FRA system for reporting and tabulating hazardous materials activities allows for other inspection overcounts. Using end-of-year report numbers to determine the number of inspections (hazardous materials inspection reports are numbered consecutively by individual inspectors) rather than counting the actual number of reports submitted, resulted in overcounts when report numbers were skipped. For example, a review of one

inspector's files showed that the inspector had prepared 77 reports in calendar years 1978 and 1979. The numbers recorded on the inspection reports, however, indicated that 174 reports had been prepared. We were told that the discrepancy was caused by the inspector's carelessness and indifference to FRA's numbering system. In another region we observed 23 skips in report numbers during calendar year 1978.

Also, FRA used a single narrative report, not only for hazardous materials inspections but also for other hazardous materials related activities, such as media contacts, training, and meetings with local officials. The yearend count of report numbers included these noninspection activities in the inspection counts. In addition, details of the inspections included in the annual report, such as the type of facilities and the number of railcars inspected, were based on estimates rather than actual counts of such activities.

For FAA, there was no consistency as to when hazardous materials inspection reports are prepared. Some inspectors prepared reports only when hazardous materials were found during a safety inspection, whereas other inspectors prepared reports even if no hazardous materials were present. The FAA hazardous materials coordinator in one region also acknowledged that the summary activity reports submitted by the region's individual field offices overstated the number of hazardous materials inspections conducted. The coordinator based this assessment on the fact that the individual inspection reports supporting the reported inspection activity were often not available at either the regional office or the field offices. However, he was unable to provide us with an estimate of the degree of inspection overstatement.

In addition, although DOT's annual report to the President and the Congress excludes incidents involving hazardous materials shipped in bulk by water, as well as the resulting casualties and property damage (see pp. 17 and 18), it does include the total Coast Guard inspection and enforcement effort in the hazardous materials area. This greatly exaggerates the Coast Guard's hazardous materials inspection and enforcement activities in relation to the reported problems.

For example, the draft 1978 annual report shows only 47 hazardous materials incidents occurring in the water mode (out of 18,022 incidents reported in all transportation modes), resulting in no deaths (out of 46), 10 injuries (out of 1,130), and $17,912 in property damage (out of $16,135,176). Yet the report shows that the Coast Guard conducted 61,886 inspections/investigations, or more than 60 percent of the total reported

for all modes, and spent 110 staff-years on inspections, or nearly 50 percent of the total inspection effort expended in all modes. In the category of accident/incident investigations alone, the report showed 4,135 Coast Guard investigations although only 47 incidents were reported in the water mode.

The annual reports also show the number of full-time and part-time inspectors available to conduct hazardous materials inspections. We noted that not all of the "full-time" hazardous materials inspectors spend all of their time conducting hazardous materials inspections or related activities. For example, FRA full-time hazardous materials inspectors also conducted other safety inspections and investigated nonhazardous materials complaints. Also, FAA full-time hazardous materials staff had only limited involvement in conducting inspections. We also noted that the staff-years reported for part-time hazardous materials inspectors may be little more than, as FAA has pointed out, "an educated estimate."

Finally, the annual reports do not provide, as required by law, an evaluation of the effectiveness of DOT's hazardous materials enforcement activities and the degree of voluntary compliance with applicable regulations. They provide little more than statistics on the number of inspections/investigations, the inspectors available, and the enforcement actions taken. The annual report for calendar year 1978, required by the Hazardous Materials Transportation Act to be provided to the Congress by May 1, 1979, had not been provided as of June 1980.

Conclusions

DOT has not developed an information system that is complete or accurate, or which allows for comprehensive planning and analysis of its hazardous materials safety program. As a result, DOT can neither determine the extent of problems in the hazardous materials transportation area nor assure the Congress--and the American public--that it is using its limited staffing and funding resources efficiently and effectively. We support DOT's recent effort to design a comprehensive hazardous materials information system and believe that implementing the projects outlined in the proposed program plan should improve the Department's administration of its hazardous materials program.

Recommendations

We recommend that the Secretary of Transportation direct the Director of MTB to improve the completeness and accuracy of the hazardous materials incident reporting system by

--better educating the industry on reporting requirements and current reporting deficiencies;

--clarifying what costs should be included in the estimate of damages resulting from hazardous materials incidents;

--clarifying instructions and criteria for developing damage estimates;

--extending the current 15-day limit for submitting incident reports to allow more time to prepare accurate reports;

--requiring that revised incident reports be submitted should data originally reported change significantly (for example, if damage estimates change a certain percentage or dollar amount, if casualty data changes--including changes from injury status to a fatality--or if other important information changes from that previously reported);

--following-up on significant cases in which (1) the reports do not contain required information, (2) other information in the report indicates the possibility of inaccurate data, or (3) other data sources (e.g., NTSB reports, Occupational Safety and Health Administration reports, insurance claim data, news reports, emergency services reports, or accident reports made to the modal agencies) indicate significant discrepancies from data reported; and

--using other data sources, such as those noted above, to better ensure that all incidents are being reported as required and that, where not, appropriate enforcement actions are taken.

We also recommend that the Secretary direct the Director to require that hazardous materials incident reports be submitted by all firms and for all areas subject to regulation under the Hazardous Materials Transportation Act. Specifically, this would require extending reporting requirements to firms (such as shippers) involved with any aspect of transportation as defined in the act, firms involved with the bulk transportation of hazardous materials by water, and firms involved with intrastate commerce which affects interstate commerce.

We also recommend that the Secretary emphasize to the MTB Director that the annual report on DOT's hazardous materials transportation program

--should accurately and completely indicate the extent of the problems associated with transporting hazardous materials and the level of effort DOT is expending on its hazardous materials program and

--as required by law, be provided to the President and the Congress by May 1 of each year for the preceding calendar year, and that it provide an evaluation of the effectiveness of enforcement activities and the degree of voluntary compliance with applicable regulations.

Agency comments and our evaluation

DOT, in its August 20, 1980, letter, generally agreed with our recommendations regarding the Department's hazardous materials information system. It did, however, express reservations as to requiring shippers to report hazardous materials incidents.

Incident reporting system

The Department stated that a study should be undertaken to determine ways in which the incident reporting system could be made more complete, accurate, and useful to DOT elements and to the public. Without commenting on our specific recommendations for improving the system, the Department noted that it will be carefully examining the incident reporting system as part of its development of a centralized hazardous materials information system. We believe that such an examination should give serious consideration to the recommendations we have noted.

Extension of reporting requirements

DOT did not agree that shippers should be required to report hazardous materials incidents, believing that such a requirement would result in a duplication of reports made by carriers. The Department stated that incidents affecting shippers in a nontransportation environment would be more properly reported to EPA or the Occupational Safety and Health Administration. It also commented that there are many more shippers than there are carriers, and that the additional reporting burden that would be placed upon both the shippers and DOT had not been considered by us from a cost-benefit viewpoint.

We do not agree that requiring shippers to report hazardous materials incidents would result in duplication of reports made by carriers if reporting responsibilities

are clearly defined. Although carriers are currently required to report hazardous materials incidents occurring during the entire transportation process--defined as not only the actual movement of the materials but also their loading, unloading, or storage incidental thereto--they may be unaware of incidents occurring during loading, unloading, or storage if they are not present during these phases. Consequently, such incidents can go unreported. Shippers, on the other hand, should always be aware of such incidents and would be in a better position to report them.

Regarding the Department's comment that incidents affecting shippers in a nontransportation environment would be more properly reportable to EPA or the Occupational Safety and Health Administration, we would like to emphasize that we that we are recommending that shippers be required to report to DOT only those incidents occurring during the transportation process as defined by the Hazardous Materials Transportation Act.

We also believe that the additional reporting requirements that would be placed upon the shippers and DOT is mandated by the Hazardous Materials Transportation Act in that the act requires DOT to include in its annual report to the President and the Congress a thorough compilation of any accidents and casualties involving the transportation of hazardous materials. Extension of reporting requirements to shippers will assure more complete and accurate reporting of incidents and enable DOT to more effectively carry out its overall responsibilities under the act.

The Department did not comment on our recommendation that incident reports also be required to be submitted by firms involved with the bulk transportation of hazardous materials by water as well as those involved with intrastate transportation. We believe that for DOT to meet its responsibilities under the Hazardous Materials Transportation Act, reporting requirements must be extended to these firms.

Annual report

DOT noted that it has always been its objective to accurately and completely indicate in its annual report the extent of any problems associated with the transportation of hazardous materials and would strive to meet the report submission date of May 1 each year. The Department did not, however, except as discussed above, indicate what, if any, actions it proposed to take to resolve the problems noted during our review.

We believe the Department also needs to make sure that the annual report accurately indicates the level of effort DOT is devoting to the hazardous materials program and that it provides a true evaluation of enforcement activities and voluntary compliance with the hazardous materials regulations.

NEED TO BETTER EVALUATE RISKS ASSOCIATED WITH TRANSPORTING HAZARDOUS MATERIALS

The Secretary of Transportation, under section 109(d) of the Hazardous Materials Transportation Act, is required to establish and maintain facilities and technical staff sufficient to provide the capability of evaluating risks connected with transporting hazardous materials, and to recommend appropriate steps to reduce those risks. MTB is responsible for satisfying these requirements. Although some progress has been made in addressing risks, MTB has not developed a program for continuously evaluating risks associated with transporting hazardous materials. Further, no group within MTB has been assigned specific responsibility for risk evaluations.

MTB perceives that its evaluations of requests for exemptions to the hazardous materials regulations meet the risk evaluation requirements of the act. In granting exemptions, MTB performs analyses to determine whether safety will be equal to or greater than the level of safety without the exemption. However, the analyses are limited in scope, considering only the specific container and commodity in the exemption application. In addition, MTB has funded risk evaluation studies of selected hazardous materials in response to a particular problem at a point in time. For example, analyses were made of transporting (1) cryogenic liquids (gases liquefied by refrigeration) by air as opposed to other modes and (2) liquefied natural gas in the Boston, Massachusetts, area to develop technical background information on the risks it presents.

Although MTB is performing some risk evaluation in its exemption approval process and its research studies, such efforts do not constitute an overall risk evaluation program. To adequately perform an in-depth evaluation of the risks involved in transporting some 1,800 hazardous materials by all modes throughout the entire transportation network (including loading, unloading, and temporary storage), by all kinds of carriers and shippers, and in all types of situations would require a comprehensive and reliable data base. As discussed earlier in this chapter, such a data base does not currently exist.

Given MTB's limited staff and data base, a comprehensive risk evaluation program addressing all facets of the transportation network for all hazardous materials, may not be feasible at this time. Those limitations, however, should not preclude DOT from giving greater attention to certain aspects of risk evaluation which could help assure more effective compliance inspection (see ch. 3) and emergency response programs (see ch. 4).

For example, one aspect of risk evaluation is determining which carriers and shippers present the greatest risks when transporting hazardous materials. MTB and the modal agencies have not developed risk profiles of carriers and shippers, except for the Coast Guard which has developed a computer system listing vessel inspection histories. Using the system, the Coast Guard can determine which vessels entering port have not been inspected recently or whose compliance history indicates potential safety problems, thus providing a basis for scheduling an inspection. The Coast Guard, however, has not developed such a system for shippers.

Because MTB, FRA, FHWA, FAA, and the Coast Guard, with respect to shippers, have not developed such risk profiles, inspections cannot be planned to cover those firms whose past records indicate that inspections are warranted. MTB, FHWA, FAA, and FRA leave it to the inspector's judgment as to which shippers and carriers will be inspected. Such a system has a number of drawbacks.

For example, new inspectors who are not familiar with the region would not know which carriers and shippers should be inspected based on their past records because profiles on which to make such a decision do not exist. Further, as pointed out in a September 1979 report from DOT's Office of Inspector General, highway carriers were not necessarily selected for inspections based on past compliance history or other safety factors, but because of available travel funds, locations, and requirements to investigate complaints about the carriers.

In FHWA, efforts are underway to place computer terminals in each regional office. The system is scheduled to be available in 1981 and will record information regarding enforcement actions, inspections, violations, and accidents related to carriers and shippers. FAA is also planning a similar system. The information to be provided by these systems could be of considerable use to field inspectors in planning inspections.

Another area where information is needed concerns determining which routes to use to transport hazardous materials. Except in a general sense, DOT does not have this information. Officials from four of the States in our review expressed a need for better information on hazardous materials moved through their States, such as the volumes and routes used.

MTB has taken some action in this area. In November 1979 MTB funded a request by the Puget Sound Council of Governments to study the transportation of hazardous materials in the Puget Sound area of the Pacific Northwest. The study will review the region's hazardous materials transportation and storage requirements and routes used and assist in developing an effective regional hazardous materials transportation program. MTB officials said that this study may be used as a guide for similar studies in other areas of the Nation. Such studies also could be extremely useful to local emergency response personnel.

Also, in January 1980, MTB proposed regulations establishing routing requirements for radioactive materials. These proposed regulations will require highway carriers to transport high-level radioactive shipments on designated routes having lower accident rates. Vehicles carrying lower level radioactive materials would be subject to less restrictive routing requirements.

NTSB has recommended a similar concept for rail carriers, routing hazardous materials over the least populated routes. The designated track would receive increased maintenance to lessen the possibility of derailment. However, MTB has not acted on this recommendation because it believes that rail operations differ significantly from highway operations in that alternative routes are considerably more limited in rail transportation than in highway transportation.

In addition, in June 1980, a private contractor completed a report for FHWA on the development of criteria to designate routes for transporting hazardous materials in the highway mode. Specifically, the objectives of the study were to (1) develop a technique for assigning risks when evaluating alternative routes and (2) develop routing procedures that can be applied at all government levels as well as by the carrier. The report provided background needed by the planner or engineer to determine the least risk route. Also, the private contractor was developing a draft users guide implementing the technique and procedures outlined in the report for delivery in July 1980.

Conclusions

MTB does not have a program to systematically evaluate the risks of transporting all hazardous materials nor does it have a group assigned to this specific responsibility. Given its limited staff and data base, a comprehensive program addressing all facets of the transportation network for all hazardous materials may not be feasible at this time. However, the limited data base should not preclude MTB and the modal agencies from using existing information to develop risk profiles of carriers and shippers to help them in carrying out their program responsibilities. Existing data from inspection reports, accident investigations, enforcement cases, and incident reports should be compiled and analyzed by MTB and the modal agencies to develop these risk profiles.

Further, no one has overall knowledge of which routes are used to transport hazardous materials. MTB has funded a study to determine the routes used to transport hazardous materials in one geographic area and has proposed routing regulations with respect to transporting radioactive materials on the highway. In addition, a report recently completed for FHWA developed criteria for determining highway routes with the least risk. These efforts are positive steps toward improving the safety of transporting hazardous materials.

Although it may not be practical or necessary to have a comprehensive data base on all routes used in the transportation of all types and volumes of hazardous materials, more comprehensive information would be desirable, particularly in densely populated areas This information could be of great assistance to Federal, State, and local officials (1) in carrying out their compliance inspections and in preparing for emergency responses to hazardous materials accidents and (2) in evaluating the potential of accidents occurring during the transportation process.

Recommendations

We recommend that the Secretary of Transportation require the Director of MTB and the modal administrators to develop risk profiles of hazardous materials carriers and shippers.

We also recommend that the Secretary require the Director to

--develop a plan to work with State and local officials in highly populated areas to study routes used to transport hazardous materials, as a basis for determining the risks associated with such routes and the desirability of altering these routes and

--assign specific responsibility within MTB for evaluating risks associated with transporting hazardous materials.

Agency comments and our evaluation

In its August 20, 1980, letter, DOT stated that although risk evaluations were currently underway or planned by the Administrations, the Department did not agree that risk profiles of hazardous materials shippers and carriers should be developed. It believed that such profiles could constitute a Government "blacklist" which could be obtained under the Freedom of Information Act.

The Department did agree that working with State and local officials in connection with the routing of hazardous materials shipments would be beneficial, and also noted several actions the Department has taken regarding hazardous materials routing.

We do not agree with the Department's position that risk profiles of hazardous materials shippers and carriers should not be developed because they could constitute a Government blacklist subject to public scrutiny. The data which could be used to develop these profiles is already collected by MTB and the modal agencies. This currently available data simply needs to be collated and made available to the Department's inspection staffs to provide them with a rational basis for scheduling compliance inspections. We must also point out that the Department's disagreement with our recommendation concerning the development of risk profiles contradicts certain efforts currently underway or being planned by the Coast Guard, FHWA, and FAA. These efforts were discussed on p. 30.

We believe that efficient and effective management of the hazardous materials compliance program requires that shippers and carriers whose past records indicate potential safety problems be identified so that these firms can be scheduled for safety inspections. We further believe that developing and using risk profiles would not only assist DOT's limited inspection staff in more rationally planning its inspection workload but would also encourage firms, to avoid being targeted for priority surveillance, to voluntarily comply with the Department's safety regulations.

The Department did not comment on our recommendation that specific responsibility for evaluating the risks associated with transporting hazardous materials be assigned to a group within MTB. We believe that such a group is

essential for continuous evaluation of such risks and that the Department needs to give serious consideration to its formation.

CHAPTER 3

NEED TO BROADEN COMPLIANCE INSPECTION AND ENFORCEMENT ACTIVITIES

Compliance inspections and enforcement actions are major efforts in DOT's program to improve the safety of transporting hazardous materials. MTB and the four modal agencies share responsibility for planning, scheduling, and performing compliance inspections; taking appropriate enforcement actions; and providing training to Federal and State enforcement personnel. In addition, many States, to a limited extent, perform their own inspections and take enforcement actions. The DOT compliance and enforcement program can be improved by

--encouraging States to expand their inspection and enforcement efforts,

--establishing a systematic basis for selecting companies for inspection,

--formulating guidelines for determining when violations are to be developed into enforcement cases, and

--developing information on all violations found to assist in measuring effectiveness of the compliance and enforcement program.

DESCRIPTION OF DOT INSPECTION PROGRAM

Federal and State inspectors conduct various types of inspections to ensure that all types of materials, including hazardous materials, are transported safely. MTB and each of the four modal agencies perform inspections to determine compliance with hazardous materials regulations. In addition, the modal agencies perform other safety inspections.

Specifically, FHWA inspects the condition of vehicles used in interstate commerce and reviews driver qualifications. The Coast Guard conducts navigational safety inspections, pollution-prevention checks, and tankship safety inspections to provide greater assurance that U.S. ports and waterways are safe. FAA conducts aircraft avionics, operations, and maintenance inspections to ensure the safety of air transportation. FRA conducts track, motive power and equipment, operating practices, and signal and train control inspections to ensure the safety of rail transportation.

Various State agencies conduct license and weight inspections, vehicle condition checks, and other safety-related inspections.

As part of the planning process, MTB and the modal agencies have set goals or developed work plans forecasting the number of compliance inspections to be accomplished. Tnese goals and work plans usually cover all types of inspections, and other activities, that inspectors are expected to perform. Generally, the work plans allocate resources to hazardous materials inspection activities and require some coverage of hazardous materials carriers and shippers.

Specifically, MTB plans to devote 10 staff-years to hazardous materials inspections in fiscal year 1980. Only about 240 container manufacturers will be inspected. In addition, some companies involved in manufacturing or transporting radioactive materials will be inspected.

The Coast Guard has set standards for (1) monitoring 20 to 30 percent of all liquid bulk transfer operations involving oil or hazardous substances, (2) continuously monitoring or supervising all shipboard handling of particularly hazardous cargoes, such as class "A" explosives and radioactive shipments, (3) boarding 50 percent of all vessels to ensure compliance with dangerous cargo regulations, and (4) boarding 10 to 15 percent of all tankships and tank barges to ensure compliance with oil and hazardous substances discharge prevention regulations. In addition, waterfront facilities are to be spot checked monthly and inspected every 6 months.

In fiscal year 1980, FHWA plans to inspect 1,716 hazardous materials carriers, 1,527 hazardous materials shippers, and 33,514 trucks, including those carrying both hazardous and nonhazardous materials.

FAA plans to inspect all aircraft operators that transport hazardous materials to ensure they have manuals containing procedures and instructions related to handling hazardous materials and assure that aircraft operators and shippers are complying with hazardous materials regulations.

FRA inspection coverage guidelines call for all carrier facilities handling hazardous materials or the billing of such materials to be inspected once each year. To the extent possible, each shipper of hazardous materials is to be monitored to ensure compliance with hazardous materials regulations, with particular emphasis on shippers using tank cars or shipping explosives.

Generally, the inspections consist of (1) reviewing shipping documents to determine whether the hazardous material is properly identified and classified, (2) inspecting containers to ensure that proper containers are being used and are in good condition, (3) inspecting carrier equipment, vehicles, and facilities to determine whether materials are properly handled and stored, (4) interviewing company personnel to determine whether they are aware of the hazardous materials regulations, and (5) inspecting containers and vehicles to ensure they are properly labeled and placarded in accordance with the hazardous materials regulations.

The inspectors usually discuss any violations with responsible industry personnel at the site. Also, the inspectors prepare a report on the results of the inspection. Except for violations involving the Coast Guard, violations believed to warrant enforcement action are forwarded to modal headquarters in Washington, D.C., where a decision is made on the type of enforcement action to be taken. In the Coast Guard, this decision is made in the district offices and headquarters does not become involved. Enforcement actions available to DOT include letters of notification, letters of warning, and assessments of civil and criminal penalties.

NEED TO EXPAND STATE INSPECTION AND ENFORCEMENT PROGRAMS

The goals, objectives, and work plans show that DOT plans to inspect only a minimal number of hazardous materials container manufacturers, shippers, and carriers in comparison to the total number of firms involved in transporting hazardous materials. The reason for minimal coverage is that only a limited number of Federal inspectors are available to perform inspections.

DOT staffing levels limit number of inspections

In 1979 DOT had only 49 full-time hazardous materials inspectors. An additional 1,606 inspectors performed hazardous materials inspections as an adjunct of their other duties. DOT inspectors by agency are shown below:

Agency	Full-time inspectors	Part-time			Total work-years
		Inspectors	Percent of time	Work-years	
Coast Guard	0	770	15	115.5	115.5
FAA (note a)	12	623	1.7	10.6	22.6
FHWA	9	152	25	38.0	47.0
FRA	19	61	15	9.2	28.2
MTB	9	0	0	0	9.0
Total	49	1,606		173.3	222.3

a/The FAA reorganized its hazardous materials program effective on July 1, 1980. The reorganization, as discussed below, greatly reduced the number of inspectors available to conduct hazardous materials inspections and the locations staffed.

MTB has only nine inspectors to cover an estimated 21,000 container manufacturers. MTB has provided only limited inspection coverage of these firms even though primary emphasis is placed on exercising compliance and enforcement authority over these kinds of firms. In 1979 MTB inspected 158 container manufacturers, and FRA inspected 128 firms. This represents only 1.4 percent of the firms subject to inspection.

FAA inspectors are responsible for inspecting air carriers, terminals, shippers, and freight forwarders involved in transporting hazardous materials. Generally, FAA inspectors are assigned only to larger airports where regularly scheduled carriers conduct the bulk of their operations, and, in 1979, conducted 6,334 carrier inspections. However, because of limited staffing, FAA inspectors do not schedule inspections of freight forwarders and shippers even though they have this responsibility. Freight forwarders frequently consolidate various shipments, some of which contain hazardous materials, and are responsible for determining hazard class, labeling, and preparing proper shipping papers. Direct shippers are responsible for classifying, labeling, preparing proper manifests, and assuring that hazardous materials are properly packaged. In 1979 FAA did not conduct any inspections of shippers or freight forwarders.

Effective July 1, 1980, FAA transferred its hazardous materials responsibilities from its Office of Flight Operations to its Office of Civil Aviation Security. The Office

of Flight Operations had more than 1,600 inspectors available to conduct hazardous materials inspections on a part-time basis. These inspectors were located at 109 field offices and surveilled approximately 10,000 domestic airports. The Office of Civil Aviation Security, on the other hand, has 210 inspectors available to conduct hazardous materials inspections on a part-time basis. These inspectors are located at 43 field offices, and surveil approximately 430 domestic airports.

According to FAA officials, despite the fewer inspectors available under the reorganization to conduct hazardous materials inspections, their location at fewer field offices, and their surveillance of fewer airports, the reorganization is expected to provide more effective and efficient surveillance of hazardous materials shipped by air than was previously possible. These officials noted that under the reorganization, hazardous materials inspections will be conducted by personnel who, unlike those previously responsible for conducting such inspections, have had responsibilities directly related to cargo and whose security responsibilities take them to cargo-holding and loading areas. These inspectors will receive training in the air transportation of hazardous materials and will be required to conduct a minimum number of inspections in order to remain proficient and up-to-date on hazardous materials matters. Furthermore, the officials pointed out that the airports that will receive periodic surveillance under the reorganization account for a very large percentage of freight transported by air.

For fiscal year 1979 we compared FHWA inspection data with its annual work plan and found that the anticipated hazardous materials inspection coverage was not achieved. Of 1,951 and 1,891 hazardous materials inspections planned for carriers and shippers, respectively, FHWA conducted only 82 percent (1,604) for carriers, and only 71 percent (1,349) for shippers. Also, only 66 percent (23,715) of the planned 35,982 inspections of trucks carrying hazardous and/or non-hazardous materials were conducted.

We also analyzed FHWA files to determine how many hazardous materials carriers and shippers were being inspected. As of November 1979, we found that only 4,213, or 36 percent of the 11,673 hazardous materials carriers in FHWA's census, had ever received a hazardous materials inspection. Only 5,041, or 47 percent of the 10,715 hazardous materials shippers in the system, had ever been inspected.

In the nine States included in our review, we found that the percent of carriers that had ever received a hazardous materials inspection ranged from 17 to 39 percent, and shippers inspected ranged from 36 to 63 percent, as shown below:

State	Total		Percent having hazardous materials inspections	
	Carriers	Shippers	Carriers	Shippers
Alabama	148	183	39	45
Arkansas	157	99	17	45
Georgia	210	331	30	39
Kentucky	251	109	31	42
Louisiana	146	177	21	36
Maryland	185	156	26	62
Nevada	77	19	19	63
Pennsylvania	558	753	30	40
Texas	374	581	31	54
Total	2,106	2,408	28	45

We also noted that an additional 26 percent of the carriers in these nine States had received motor carrier safety inspections but not hazardous materials inspections.

We analyzed the carrier inspection data by fleet size to determine whether the largest carriers were being inspected. We identified a number of carriers with 50 or more vehicles that had never been inspected. These carriers were not inspected because of limited staff and because the carriers had never been involved in incidents which required safety investigators to schedule them for inspections. Our analysis of these carriers shows the following:

State	Hazardous materials carriers with fleet size 50 or more	Last year of inspection		
		Since 1974	1974 & before	Never
Alabama	12	8	3	1
Arkansas	6	3	1	2
Georgia	8	3	1	4
Kentucky	8	4	2	2
Louisiana	6	3	2	1
Maryland	15	2	3	10
Nevada	1	0	1	0
Pennsylvania	71	18	20	33
Texas	47	30	14	3

FHWA inspectors' heavy workload is illustrated in the States of Texas, Louisiana, and Arkansas, where FHWA has only 1 full-time hazardous materials specialist and 11 safety investigators to cover 369,000 square miles. As of September 1979, FHWA had identified 677 hazardous materials carriers and 859 hazardous materials shippers headquartered in these States plus an unknown number of carrier and shipper operating terminals which are not on FHWA computer lists but subject to inspection. For example, one firm headquartered in Texas is known to have at least 42 terminals subject to inspection. Large, nationwide carriers and shippers may have hundreds of terminals throughout the United States.

In addition to inspecting hazardous materials carriers and shippers, the 11 safety investigators are responsible for safety inspections of 12,600 other carriers and numerous terminal operations in these States. The safety investigators also conduct accident investigations and noise checks and participate in training State and industry representatives.

We compared Coast Guard inspection data with mission performance standards nationwide and in selected port cities in the 3d, 5th, and 8th districts. The schedule on the following page shows that only a few of the standards were met in 1979.

The primary reason for not achieving a higher percentage of compliance inspections is the limited number of staff assigned to port safety offices. A recent study in one office showed that meeting all assigned goals and performing all tasks would require 286 staff-years. At the time of our review, there were only 67 staff-years allocated to port activities.

PERCENT OF INSPECTIONS PERFORMED IN FISCAL YEAR 1979

COMPARED TO THE COAST GUARD'S MISSION PERFORMANCE STANDARDS

Type of inspection	Performance standard	Nationwide	Baltimore	Houston	New Orleans	Philadelphia	Port Arthur
Monitor liquid bulk transfers							
Vessels-oil	20-30	13.8	20.1	6.1	6.7	6.1	11.6
Vessels-hazardous substances	"	18.3	72.7	9.1	5.9	13.7	42.1
Barges-oil	20-30	31.9	16.4	1.2	2.1	0.7	6.4
Barges-hazardous substances	"	2.7	5.1	4.2	8.5	0.7	12.8
Cargo supervision							
Explosives class "A"	100	75.7	100	(a)	90.6	100	(a)
Dangerous cargo of particular hazard (note b)	100	28.5	100	0	13.9	20	24.2
Supervised radioactive material	100	64.9	100	83.3	100	100	(a)
Dangerous cargo boardings	50	21.0	28.6	13.1	9.9	12.9	10.3
Tank boardings	10-15	31.2	25.8	17.4	17.0	22.9	14.9
Barge boardings	10-15	8.8	22.1	8.0	1.3	2.9	5.7

a/Not applicable since none were transported through these ports during this time period.

b/A dangerous cargo of particular hazard is any commodity which would create an unusual hazard if released because it (1) is highly reactive or unstable, (2) presents unusual or severe fire hazards, (3) has severe toxic properties, or (4) requires refrigeration for safe confinement.

According to FRA data, major rail carriers (Class I) are inspected more frequently than other operators. This is to be expected since they transport approximately 98 percent of the total cargo, including hazardous materials. However, shortline and terminal carriers also handle hazardous materials and are required to be inspected on a periodic basis. In one FRA region with 15 Class I carriers, 47 shortline carriers, and 6 terminal carriers, all Class I carriers were inspected one or more times in 1978. Only two of the shortline railroads and three of the terminal carriers received hazardous materials inspections during this period.

FRA inspections of shippers of hazardous materials by rail are limited. In one region the inspectors had identified 426 shippers. During calendar year 1978, regional inspectors visited or inspected only 27, or about 6 percent, of the shippers.

State programs--what are they?

Given the limitations on Federal inspections, it is important to recognize what the States are doing in regulating the transportation of hazardous materials. Some States are already involved in enforcing hazardous materials regulations. Thirty-eight States, including the 9 States in our review, and the District of Columbia have adopted all or parts of the Federal hazardous materials regulations. Seven States have adopted similar regulations. However, enforcement may be limited or nonexistent due to lack of program funds or training. In addition, all States have motor carrier safety regulations which contribute to safe transportation of hazardous materials by highway.

The schedule on the following pages shows the State agencies involved in regulating the transportation of hazardous materials in the nine States in our review.

SCHEDULE OF STATE AGENCIES INVOLVED

IN REGULATING TRANSPORTATION OF HAZARDOUS MATERIALS

State	Agency responsible for enforcing hazardous materials regulations	Number of enforcement officers	Comments
Alabama	Public Service Commission	10	Regulations currently apply to interstate carriers only--proposed regulations to apply to intrastate carriers by July 1980.
Arkansas	Arkansas Transportation Commission	20	Responsible for promulgating and enforcing motor carrier safety and hazardous materials regulations.
Georgia	Department of Transportation	110	Legislation passed in 1979 covering transportation of radioactive materials, liquefied natural gases, and polychlorinated biphenyls.
	State Fire Marshal	7	Responsible for regulating explosives and other hazardous materials--very little enforcement during transportation.
Kentucky	Department of Transportation-Division of Highway Enforcement	96	Enforces hazardous materials regulations for other State agencies--working to adopt all Federal hazardous materials and motor carrier safety regulations.
	Department of Mines and Minerals	-	Adopted regulations for vehicles transporting explosives--enforcement handled by Division of Highway Enforcement.
	Office of State Fire Marshal	15	Drivers of cargo tanks required to register and obtain identification card when transporting flammable liquids or flammable gas in or through the State.
	Department for Human Resources	-	Adopted regulations covering transportation of radioactive materials--enforcement handled by Division of Highway Enforcement.

State	Agency responsible for enforcing hazardous materials regulations	Number of enforcement officers	Comments
Louisiana	Department of Public Safety (State Police)	850	State passed legislation in 1979 covering transportation of hazardous materials. Department of Public Safety is drafting regulations--basically adopting federal regulations. Hazardous waste transportation of particular interest. Currently only limited enforcement occurring because no training has been given to state police.
Maryland	Maryland State Police	46	Enforces hazardous materials regulations in addition to enforcing size, weight, and fuel tax rules for highway vehicles.
	Maryland Port Administration	5	Issues and enforces regulations relating to transportation of hazardous materials thro gh the Port of Baltimore.
	Maryland Fire Marshal	28	Licenses and inspects carriers of explosives and liquid petroleum gas if shipments originate or terminate in Maryland--conducts all types of inspections and investigations related to fires.
Nevada	Public Service Commission	8	Has economic regulatory authority over highway users. Works with Highway Patrol when they find hazardous materials violations.
	Highway Patrol	-	Recently authorized five staff to perform hazardous materials inspections with particular interest on radioactive wastes being transported to the Beatty, Nevada, dump.

State	Agency responsible for enforcing hazardous materials regulations	Number of enforcement officers	Comments
Pennsylvania	Hazardous Substance Transportation Board	5	Enforces hazardous materials regulations governing truck transportation.
Texas	Department of Public Safety-License and Weight Division	160	Enforces hazardous materials regulations and other regulations governing truck transportation. Penalties for violations limited to $200.
	Texas Railroad Commission	13	Responsible for regulating safety of liquefied petroleum gases. Licenses and inspects trucks, user facilities, and installers.

In addition to the enforcement activities shown in the schedule, all of these States, except Pennsylvania, have agreements with NRC to license and inspect users of radioactive materials, except reactor facilities, within their States. Inspections include reviewing the packaging and labeling of radioactive materials being prepared for transportation.

All of the States have State patrol units which enforce traffic safety rules and regulations. While these enforcement activities are not directly related to hazardous materials regulations, they do affect the safe transportation of hazardous materials. These officers could be trained in hazardous materials regulations, thereby increasing the number of personnel enforcing such regulations.

The FRA has implemented a program to involve States in inspecting track and equipment used in rail transportation. While this program is not directly involved in enforcing hazardous materials regulations, it is related to the safe transportation of hazardous materials because poor track and equipment conditions frequently cause rail accidents.

The FRA program evolved from the Federal Railroad Safety Act of 1970 (45 U.S.C. 421 et seq.) which authorized up to 50 percent Federal funding of State rail safety inspection activities. Although the act was passed in 1970, implementation of the State participation program has been slow. As of November 1979, only 30 States were participating. Of 185 authorized inspector positions, only 80 had been filled. Some of these 80 positions were part-time, but FRA was unable to tell us how many. Some of the delay in achieving greater participation has been attributed to FRA's reluctance to encourage States to participate, slowness in issuing regulations and guidance to the States, restrictive inspector standards, Federal restrictions on the State inspection and enforcement role, and State inspector salaries not being commensurate with Federal inspector salaries.

Under the current FRA program, State inspectors can participate only in track and equipment areas. They do not perform inspections of operating practices, motive power, or hazardous materials regulations. FRA is opposed to expanding the State role until the present program is proven effective.

We believe the FRA program can be developed into an effective program for improving the safe transportation of hazardous materials. FRA needs to encourage the States to participate to the maximum extent permitted. For example,

FRA might provide additional training slots in the State program and assist in recruiting new inspectors. Additionally, FRA should consider expanding the State role to include inspections which cover compliance with hazardous materials regulations.

To encourage more State participation in DOT's regulatory programs, DOT will have to provide more training for State inspectors and enforcement personnel. Currently, MTB has no specific programs designed to assist State agencies in training State employees in hazardous materials compliance and enforcement. Some State personnel have received training sponsored by DOT's Transportation Safety Institute, Oklahoma City, Oklahoma. For example, in 1979, 275 Federal and 821 State and industry representatives received training sponsored by the Institute. Also, individual modal agency employees will provide assistance to the States upon request. Except as otherwise noted, no statistical information was available to show the extent of this assistance.

MTB's primary training and education assistance to the States is in preparing and distributing information. MTB does not train all inspectors. The States do the training and MTB provides the information used. According to MTB, all 50 States have conducted training classes. The scope of these classes varies greatly, and MTB is unable to determine the effectiveness of its assistance.

FHWA inspectors have assisted in training State inspectors and enforcement personnel. For example, an FHWA official has been conducting training seminars on the Federal hazardous materials regulations for cadets attending Maryland's State Police Academy. Also in Maryland, State police and other State agency representatives have observed roadside vehicle safety inspection/equipment checks done by FHWA personnel. Pennsylvania has made similar efforts. For example, two FHWA officials conducted a hazardous materials training seminar for the Public Utility Commission in September 1979. In Texas, until late 1979, there had been no training of enforcement personnel. However, in late 1979, through the efforts of Public Safety and FHWA officials, approximately 160 License and Weight officers were trained in the regulations.

State, local, and industry personnel in Georgia, Kentucky, and Alabama had received some training from FHWA, while State personnel in Arkansas and Nevada had not. Although Louisiana State Highway patrolmen had not been trained at the time of our review, some training was being planned for fiscal year 1980.

FRA provides for formal training at the Transportation Safety Institute for State track and freight car inspectors, and FRA regional offices provide on-the-job training to State inspectors. Also, if time permits, FRA inspectors will respond to requests from groups to provide information on regulations and training that is available. In this role individual FRA hazardous materials inspectors conduct training seminars or give speeches to interested State and local groups.

Neither FAA nor the Coast Guard provide hazardous materials training to the States because, generally, States do not become involved in regulating hazardous materials transported by air or water.

One area in which DOT has sought State participation is in developing information on transporting radioactive materials. In a joint program DOT and NRC have established agreements with various States to conduct surveys and collect information about transporting radioactive materials.

Under this program participating States have (1) provided data on the types and amounts of radioactive materials shipped, (2) monitored the shipments, (3) inspected carrier terminals and freight forwarders, (4) visited ports and reactor sites, and (5) identified violations of the regulations. In the future, DOT and NRC have agreed to shift the principal objective of the program toward enforcement of the radioactive materials transportation regulations.

Between fiscal years 1973 and 1979, 15 States and New York City participated in the program. An additional six States have expressed interest in participating. Of the nine States in our review, five (Georgia, Kentucky, Louisiana, Pennsylvania, and Texas) have participated and two (Maryland and Nevada) have expressed an interest. Texas and Kentucky, which last participated in 1974 and 1978, respectively, have expressed an interest in getting back into the program. Through fiscal year 1979 DOT and NRC provided the States with $257,400 for the Federal share of the program cost.

During our review we talked with officials of various State agencies in the nine States to determine what assistance the Federal Government could provide to expand State participation in the enforcement of hazardous materials regulations. Generally, the officials expressed a need for Federal funds to train State enforcement and emergency response personnel and to send more State personnel to Federal training centers such as DOT's Transportation Safety Institute. Officials from four of the States expressed a need

for better information on hazardous materials moved through their States, such as volumes and routes used. Officials from four States also commented on the need for better cooperation from FRA to improve the FRA State participation program and to expand the State railroad inspection role to include such areas as compliance with hazardous materials regulations.

Conclusions

Generally, DOT inspectors are dedicated to assuring the safe transportation of hazardous materials. However, DOT obviously does not have enough inspectors to cover the entire hazardous materials industry within a reasonable time. Given budget restrictions, difficulty in obtaining additional staff, and the demands of other programs, DOT needs to encourage and actively seek more State participation in hazardous materials activities. By doing this DOT could achieve more comprehensive coverage of the hazardous materials industry.

Although 45 States and the District of Columbia have have adopted all or part of the Federal regulations, or similar regulations, the States' enforcement efforts vary greatly. Further, not all State enforcement personnel are trained or have specific authority to enforce hazardous materials regulations.

Recommendation

We recommend that the Secretary of Transportation direct the modal administrators and the Director, MTB, to work with the States to develop and implement comprehensive plans to expand State roles in enforcement of hazardous materials regulations. Such plans should include demonstration programs, expansion of existing programs such as FRA's track and equipment inspection program, and development of training for State enforcement officers in hazardous materials regulations.

Agency comments and our evaluation

DOT

DOT, in its August 20, 1980, letter, agreed with our recommendation that the States' role in enforcing the hazardous materials regulations be expanded. The Department said that it plans to increase its involvement with the States as resources become available.

Given DOT's limited staffing and funding resources and the size of the hazardous materials transportation industry, we strongly support the Department's increased involvement in this area.

FEMA

FEMA, in its August 18, 1980, letter, noted that no program to deal with a national problem of this magnitude can be successful without the involvement and full participation of State and local governments.

NEED FOR SYSTEMATIC SELECTION OF FIRMS FOR INSPECTION

Those companies presenting the greatest risks to the public may not be selected for inspection or monitored closely enough to ensure compliance with the regulations. The companies inspected are generally chosen subjectively by the inspectors without an analysis to show the need for inspection. Selections are made in this manner because DOT does not have a program to establish risk profiles for companies involved in transporting hazardous materials, or a complete listing of all of these companies, as discussed in chapter 2. Consequently, DOT's limited resources may not be used in the most efficient and effective manner to improve the safety of transporting hazardous materials. DOT could improve its coverage of the hazardous materials industry by developing a systematic plan for selecting firms to be inspected.

MTB and the modal agencies use various approaches in selecting companies for inspection. While accident investigations and complaints generally receive the highest priority in each agency's inspection activities, an important part of their work involves routine compliance inspections, follow-up inspections, and inspections of specific emphasis areas. It is in selecting firms for routine compliance inspections that DOT needs to develop a systematic selection process. Currently, inspectors generally use their personal knowledge in selecting companies for inspections because no system exists to provide information on the high-risk companies.

The Coast Guard has developed a system to assist in selecting hazardous materials carriers to be inspected. Using its Marine Safety Information System, each Captain-of-the-Port can allocate his inspection resources on a daily basis so that the most important areas are covered. After receiving notification from vessels or barges that are due to arrive in port within 24 or 4 hours, respectively, the

Captain-of-the-Port can review the vessel's/barge's inspection history and select those most likely to be in violation or those that have not been inspected recently.

MTB has no formal, written program plan for selecting companies for inspection. Decisions as to deployment of MTB's inspectors are made quarterly, when inspectors meet and share information on accident statistics, safety complaints, and previous inspection experience. Risk profiles of container manufacturers and other companies subject to MTB inspection have not been developed to assist in selecting companies for inspection.

FHWA inspectors also must rely on personal knowledge of carrier and shipper activity in their geographic area to select firms for inspection. The FHWA management information system does not provide a risk profile of companies or a comprehensive listing of all company locations.

FRA hazardous materials inspectors give priority to investigating hazardous materials accidents, incidents, and complaints. Follow-up inspections and compliance inspections are conducted when time permits. Specific carriers or shippers are selected for compliance inspections based on the inspector's personal knowledge rather than on a systematic basis.

FAA inspectors do not maintain data on shippers of hazardous materials and do not routinely inspect them for hazardous materials compliance. The district offices do know which carriers are authorized to transport hazardous materials, but they do not know which carriers actually transport hazardous materials, what or how much they carry, and when or where they carry it. Criteria has been established for the frequency of hazardous materials inspections by type of carrier, and district offices establish work plans and carry out inspections based on inspectors' knowledge of needs and priorities. However, FAA has no system to assist the inspector in setting inspection priorities.

Another area of concern is that DOT's inspection program focuses on carriers. Shippers are not inspected as frequently as carriers, yet most violations can be traced back to shippers. For example, FAA, between July 1974 and July 1979, took final action on 257 enforcement cases involving hazardous materials. Of these enforcement cases, 187, or 73 percent, were against shippers/freight forwarders while only 70, or 27 percent, were against carriers. During the 5-year period 1975-79, however, FAA did not inspect any shippers.

Another indication that shippers should be getting more attention is found in an analysis of 282 spills from railroad tank cars between June 1973 and June 1977. These spills resulted in 343 injuries. An analysis of the incident reports showed that the majority of incidents resulted from the shippers' failure to provide loaded tank cars to carriers in proper condition for transportation. As noted on page 43, FRA inspections of shippers were also limited.

FAA and FRA, with their limited inspection staffs, directed their inspection efforts primarily toward safety inspections of carriers. As discussed on page 35, these carrier inspections involve many safety inspection tasks, including hazardous materials inspections. Because their inspection responsibilities for shippers involve only hazardous materials, FAA and FRA give shipper inspections a lower priority.

Conclusions

DOT's limited inspection resources may not be used in the most efficient and effective manner possible. Generally, selecting companies for inspection is based on the personal knowledge of the individual inspectors. Systems for identifying inspection priorities--using data such as the types and volumes of hazardous materials shipped; inspection, violation, and enforcement histories; and accident records--have generally not been developed to assist the inspectors in selecting companies for inspection. Furthermore, DOT's inspection program is focused on carriers although available information indicates that problems occurring during the transportation of hazardous materials can often be attributed to the shippers of those materials.

Recommendation

We recommend that the Secretary of Transportation direct the modal administrators and the Director, MTB, to develop systems for giving priority to inspecting companies presenting the greatest public risk while transporting hazardous materials. Increased emphasis should be placed on inspecting shippers of hazardous materials.

Agency comments and our evaluation

In its August 20, 1980, letter, DOT agreed that a systematic procedure should be developed to assure that the hazardous materials program is effectively targeted to problem areas representing the greatest risk to public safety and stated that programs were presently underway to accomplish this objective. The Department, however, disagreed that

emphasis needed to be placed on inspecting shippers, stating that a balanced inspection program was preferable.

We agree with DOT that a balanced program of inspecting hazardous materials shippers, carriers, and container manufacturers is desirable. We do not believe, however, that the current inspection program, with its limited coverage of hazardous materials shippers, is a balanced one, particularly in view of the problems which can often be attributed to these firms. We, therefore, continue to believe that the Department needs to increase the inspection of hazardous materials shippers in order to provide a balanced inspection program.

NEED TO ASSURE THAT ENFORCEMENT ACTIONS ARE ADEQUATE

The Hazardous Materials Transportation Act gave DOT the authority to impose civil penalties in all modes up to $10,000 for each violation of the hazardous materials regulations, whereas previous legislation did not provide for civil penalties in the rail and highway modes. The act also raised the maximum criminal penalty for "willful violations" up to $25,000 and 5 years imprisonment.

When violations are found as a result of hazardous materials inspections, a decision is made as to the type of enforcement action, if any, to take. Enforcement actions range from requiring on-the-spot correction of the problem with no further action, to developing an enforcement case with monetary penalties and imprisonment. The majority of enforcement cases are handled through the civil penalty process.

In 1978 the DOT task force recommended that a study be made to determine whether the civil and criminal penalties are consistent with the nature and seriousness of the violations and are assessed equitably by the various operating administrations. This study was ongoing at the time of our review. Therefore, we limited our review efforts in this area.

During our review, however, we noted that field inspectors have been provided only minimal guidance on types of violations which should be developed into enforcement cases. Further, the agencies do not collect data on the number of violations found during inspections. Such information would be useful in determining the most common violations, which would assist in programing compliance activities and provide a trend analysis to determine effectiveness of compliance inspection programs.

The guidelines which have been provided to inspectors generally state that inspectors must exercise good judgment in deciding what violations warrant further action. For example, FRA guidelines simply provide that when a violation is found, the inspector is required to exercise good judgment as to how the matter should be handled for correction. He may elect to handle it directly with appropriate representatives of the carrier and/or shipper or decide to submit a violation report for prosecution. The guidelines further state that in the event the carrier and/or shipper is not amenable to the corrective action required to prevent future violations, a violation report should be submitted for prosecution.

The FAA enforcement handbook provides more detailed guidelines on processing violations, including sample warning notices, letters in lieu of warning, and a table of suggested sanctions for different types of violations. However, the inspectors must often use their own judgment in deciding how to resolve a violation.

FHWA guidelines state the following criteria should be considered when deciding to develop an enforcement case: (1) prior efforts to obtain compliance were ineffective, (2) record of prior violation, (3) company knowingly and willfully violated regulations, (4) accident ratio, (5) pattern of indifference toward regulations, (6) previous complaints, and (7) compliance cannot be expected without imposing penalties.

The Coast Guard's guidelines provide that inspectors must first determine whether a violation is minor or major. Generally, violations which do not present a threat or hazard to life, property, or the marine environment are to be classified as minor violations and require no formal action other than preparing a violation report. The guidelines included examples of minor violations such as a missing flag, call sign, or signature on a dangerous cargo manifest. Violations which clearly present a threat or hazard to life, property, or the marine environment are major violations and must be submitted to the District Commander for disposition by the District Hearing Officer. No examples of major violations were included in the guidelines.

MTB's stated policy is to develop an enforcement case on all operators found in noncompliance during inspections. However, no written guidance is provided on determining penalty assessments.

While the various guidelines provide some general guidance, they do not always distinguish between serious and non-serious violations, and they do not provide guidance on which violations should be documented when proceeding with an enforcement case. Thus, inconsistencies in enforcement can result when different inspectors view the same type of violations differently.

In addition, MTB and the modal agencies do not compile statistics on the total violations found by field inspectors. Thus, there is no means of measuring the overall effectiveness of the compliance inspection program. We found some examples where the number of violations were indicated. For example, FHWA developed statistics on a roadside check of motor vehicles conducted in May 1979 at major truck crossings along the Mississippi River. During this inspection activity, 297 vehicles (17 percent of the total vehicles inspected) were carrying hazardous materials. Inspectors found 291 violations of hazardous materials regulations, including 16 which caused the vehicles to be placed out-of-service until corrections of the violations could be made. An additional 93 vehicles were placed out-of-service because of violations of safety regulations other than hazardous materials regulations. However, no statistics were available on the number of enforcement cases which resulted from this roadside check.

Regional inspectors stated that violations found during this type of inspection do not usually result in an enforcement case. If the carrier has a history of violations or if the violation is flagrant, then an enforcement case may be developed. Similarly, initial surveys of a carrier or shipper rarely result in enforcement cases, even though violations may be found. FHWA field inspectors stated it is an unwritten policy not to develop enforcement cases during the first survey. Headquarters officials stated that no such policy exists, but they do encourage inspectors to make sure the carrier/shipper is knowledgeable of the Federal regulations.

We found very few of the inspections resulted in enforcement cases. Data obtained from DOT's records for 1979 showed that, overall, less than 3 percent of the inspections resulted in enforcement cases. A breakdown by agency showing inspections and enforcement cases for 1979 is shown in the following table.

Agency	Inspections	Cases initiated	Percent
MTB	326	19	5.8
Coast Guard	63,585	2,204	3.5
FHWA	6,490	176	2.7
FRA	26,369	95	0.4
FAA	6,476	93	1.4
Total	103,246	2,587	2.5

Conclusions

Generally, field inspectors are provided only minimal guidance for determining whether a violation of hazardous materials regulations warrants prosecution through the civil or criminal penalty process. This guidance also varies considerably among the DOT agencies. Further, there is a lack of information on violations noted during inspections. Without clear guidelines and the compilation of information on violations noted, DOT cannot measure the effectiveness of the compliance inspection program.

Recommendations

We recommend that the Secretary of Transportation direct the modal administrators and the Director, MTB, to coordinate the formulation of uniform guidelines which can be used by field inspectors to determine when violations will be developed into enforcement cases. Further, the Secretary should direct the modal administrators and the Director to adopt a systematic means of recording all violations found during inspections and analyze this information to assist in planning inspection activities and measuring program effectiveness.

Agency comments and our evaluation

DOT, in its August 20, 1980, letter, agreed with our recommendation regarding the formulation of uniform enforcement guidelines and noted that work is currently underway in the Office of the General Counsel to achieve this objective. The Department, however, did not respond to our recommendation that DOT adopt a systematic means of recording all violations found during inspections.

We believe the Department should adopt a system for recording violations and use this information in planning its inspection activities and in measuring the effectiveness of its compliance inspection program.

CHAPTER 4

EMERGENCY RESPONSE ORGANIZATIONS--AN IMPORTANT AND NECESSARY ELEMENT IN TRANSPORTING HAZARDOUS MATERIALS

The Congress and the public have expressed concern about the risks associated with transporting hazardous materials through local communities. The frequency of accidents and the potential for catastrophic accidents have increased as more products and larger volumes of hazardous materials are transported, thus intensifying this concern. DOT and other Federal, State, and local agencies seek to prevent hazardous materials accidents through inspection and enforcement programs. However, even with the best possible safety devices and programs, some accidents will occur. Therefore, it is essential that effective emergency response organizations exist to deal with such accidents as efficiently and safely as possible.

The need for an effective emergency response capability was recognized in the Hazardous Materials Transportation Act. The act required DOT to establish and maintain a central reporting system and data center capable of furnishing technical advice to law enforcement and firefighting personnel to aid them in responding to emergencies arising from transporting hazardous materials. In this chapter we will discuss numerous Federal, State, local, and private industry emergency response organizations and the need for better coordination, training, and dissemination of information.

FEDERAL EMERGENCY RESPONSE ORGANIZATIONS

The Federal Government's principal emergency response program is outlined in the National Oil and Hazardous Substance Pollution Contingency Plan (National Contingency Plan). The Plan evolved from the authority in section 311(c)(2) of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.). The Plan, issued by the Council on Environmental Quality, applies to all Federal agencies and provides for coordinated Federal action to prevent discharges of oil and hazardous substances and to protect the public health, welfare, and environment when accidents involving hazardous substances occur.

The Plan established the National Response Center as the national communications center for emergency response activities. The Center is operated 24 hours a day

by the Coast Guard and receives initial reports of spills of oil, hazardous substances, and hazardous materials. The Center provides facilities, communications, information storage, and other requirements for coordinating emergency response at the national level. In addition, 10 Regional Response Centers have been established with coordinating functions similar to those of the National Center.

The Plan also delegates specific responsibilities to three other groups--the National Response Team, the Regional Response Team, and the On-Scene-Coordinator. The National Response Team plans and prepares responses to hazardous materials accidents, coordinates efforts at the national level, and provides advice to the Regional Response Team and the On-Scene-Coordinator. It also evaluates agency preparedness and the effectiveness of emergency response plans, recommends needed policy changes in the response organizations, and recommends revisions to the National Contingency Plan when necessary. Representatives from the following 12 Federal agencies are members: the Environmental Protection Agency; the Federal Emergency Management Agency; and the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, the Interior, Justice, Labor, State, and Transportation.

The Regional Response Teams are similar to the National Response Team but operate on a regional basis. Its membership is composed of regional representatives from the same 12 Federal agencies and representatives from State governments and municipalities with major ports and waterways. Regional Response Team members develop the regional contingency plans, assist the On-Scene-Coordinators in developing local Federal contingency plans, plan the use of agency resources, and respond to emergency situations. The Regional Response Team meets quarterly to review emergency response actions. It recommends policy changes, considers changes in the regional and local contingency plans, and evaluates the preparedness and effectiveness of member agencies in responding to emergencies.

The On-Scene-Coordinator is a predesignated EPA or Coast Guard official for each geographic area under Regional Response Centers and is responsible for coordinating and directing Federal emergency response efforts at the scene of an accident. The coordinator monitors response activities and, when necessary, assures cleanup of spills which the spiller or State and local officials are unwilling or unable to cleanup in a manner which protects the environment. The coordinator provides reports to and receives advice from the Regional Response Team. Activities are coordinated through the National and Regional Response Centers.

EPA maintains the Oil and Hazardous Materials Technical Assistance Data System, a computer data system designed to include all information pertinent to emergency response efforts on oil or hazardous substances. It includes a wide variety of physical, chemical, biological, toxicological, and commercial data on about 1,000 oil and hazardous substances. The prime function of the system is to provide immediate feedback of information to emergency response teams.

The Department of Energy provides the main Federal assistance to States in responding to nuclear transportation accidents. The Department administers a nationwide emergency assistance program from eight widely dispersed regional offices. Each office has trained and equipped response teams available to assist State and local governments.

FEMA is the focal point and coordinator in the Federal structure for all emergency management planning, response, and preparedness activities and is continually involved with hazardous materials emergencies through its membership on the National Response Team and the Regional Response Teams. Established on April 1, 1979, FEMA brings together those Federal agencies that had the major responsibilities for both peacetime and wartime emergency planning--the Federal Preparedness Agency, the Defense Civil Preparedness Agency, and the Federal Disaster Assistance Administration. The U.S. Fire Administration and the Federal Insurance Administration are also a part of FEMA. FEMA monitors emergency situations and evaluates requests from State governors for major disaster declarations. If a major disaster is declared by the President, FEMA coordinates and directs Federal response to assist in alleviating the emergency.

STATE AND LOCAL EMERGENCY RESPONSE ORGANIZATIONS

State and local governments have responsibilities under regional and local contingency plans. Every State Governor was asked to appoint an agency or office to represent the State on Regional Response Teams. The State representative participates fully in all Regional Response Team activities and designates personnel to supervise discharge removal operations. Officials from municipalities having major ports and waterways also participate in Regional Response Team activities. Their responsibilities include planning for emergency response actions, especially traffic control, land access, and removal and disposal of hazardous materials.

The Disaster Relief Act of 1974 (42 U.S.C. 5121 et seq.) authorized Federal grants, not to exceed $250,000, to each State to develop plans, programs, and capabilities for disaster preparedness and prevention. These grants are administered by FEMA. The act also authorizes annual grants not to exceed $25,000 to each State for improving, maintaining, and updating the State disaster plan. Most States have included hazardous materials emergency responses in their plans. All nine States included in our review had addressed hazardous materials emergencies in their State plans and delegated responsibilities for responding to these emergencies among various State agencies.

At the local level there are varying degrees of sophistication as to hazardous materials response capabilities. Generally, local fire departments have primary responsibility for initial response with support as needed from the local civil defense and police departments. Larger fire departments may have hazardous materials specialists or teams with specialized equipment to deal with emergencies. Smaller fire departments, on the other hand, generally do not have the specialists or the equipment to deal with all types of hazardous materials emergencies and may have to call in experts from the outside for assistance.

INDUSTRY EMERGENCY RESPONSE ORGANIZATIONS

The Chemical Transportation Emergency Center (CHEMTREC), sponsored by the Chemical Manufacturers Association, is perhaps the best known and most widely used of any response organization. It currently receives more than 500 reports of hazardous materials emergencies each month. It operates 24 hours a day and can be reached by a direct-dial, toll-free telephone call from anywhere in the continental United States. The system's comprehensive data files provide initial emergency handling instructions and other response information on more than 18,000 chemicals and trade name products. It provides immediate advice to emergency sites, and promptly contacts the shipper involved for more detailed assistance and appropriate follow-up actions. CHEMTREC also serves as a communication link for the Chlorine Emergency Plan and the National Agricultural Chemicals Association's Pesticide Safety Team Network.

The Chlorine Emergency Plan was established by U.S. and Canadian chlorine manufacturers to handle emergencies involving chlorine. Each manufacturer maintains a response team that is available 24 hours a day. In the event of an accident, CHEMTREC notifies the chlorine manufacturer nearest the accident, which sends the company team to assist in handling the emergency.

The National Agricultural Chemicals Association operates a national pesticide information and response network called the NACA Pesticide Safety Team Network. The network is made up of about 45 emergency teams located throughout the country and offers information and onsite response, when necessary, for pesticide emergencies. The pesticide manufacturers provide onsite response regardless of whose product is involved. The network can be contacted through its own 24-hour telephone service or through CHEMTREC.

Several large chemical manufacturers have formed in-house teams to respond to emergencies involving their products. Basically, these teams provide advice on the nature and associated risk of the chemical, evacuation requirements, and suggested control procedures. They are activated through toll-free emergency telephone numbers that are staffed by trained operators 24 hours a day or through CHEMTREC. In addition to telephone responses, the teams provide onsite assistance and advice when necessary.

In some areas of the country, mutual aid organizations have been established. For example, Houston, Texas, has the Channel Industries Mutual Aid Organization. This organization has 73 members, meets regularly for training, has their own radio network, and works with the Houston Fire Department in handling major incidents involving hazardous materials.

Many private companies have been established for the sole purpose of providing clean-up and disposal services. Clean-up firms maintain 24-hour telephone service. They are usually hired by the carrier or shipper involved in the accident or can be hired by the State or Federal Government if a hazardous materials spill is not being adequately and promptly cleaned up. Disposal firms generally concentrate on detoxifying or otherwise treating spilled hazardous materials so as to facilitate disposal operations.

Many sources such as books and manuals exist that provide response information on hazardous materials. For example, EPA, in a March 1979 study on the Development of an Emergency Response Program for Transportation of Hazardous Waste, listed at least 43 such sources of information. These information sources can generally be divided into two categories: those that provide data listing the properties of selected hazardous materials and those that address methods for dealing with specific hazardous materials during emergencies and are directed toward emergency response personnel. An On-Scene-Coordinator or technical advisor can use this information to plan safe, effective measures for controlling the hazardous materials and to verify approaches for control that are being considered.

NEED TO IMPROVE COORDINATION OF EMERGENCY RESPONSE EFFORTS

With the many emergency response organizations within government and the private sector, coordinating the activities of these organizations efficiently and effectively is a monumental task requiring strong leadership and constant surveillance. The DOT hazardous materials emergency response program has been criticized in recent years by the NTSB as well as various organizations associated with the fire service. It has been alleged that emergency response efforts are confused, uncoordinated, and fragmented because of poor communication and coordination between and among Federal, State, and local governments and private industry. There also is confusion as to who is in charge of emergency response activities at the scene of hazardous materials accidents.

DOT has recently taken actions to minimize these problems. One action was to establish a one-call emergency notification system as recommended in the September 1978 report by DOT's Hazardous Materials Task Force. The system is called the Hazardous Materials Emergency Response System and has a full-time telephone and computer data link capability that will ensure instantaneous National Response Center and CHEMTREC coordination of hazardous materials emergencies. Under the system, when either CHEMTREC or the National Center receives a call, the other also receives the call. DOT believes the system uses the resources of both the Federal Government and industry efficiently and effectively without duplicating the efforts of either party, and ensures better and more complete cooperation. CHEMTREC will be responsible for giving advice to emergency response personnel and contacting the appropriate shipper(s) and industry organization(s). DOT, through the National Response Center, will alert the National Response Team and On-Scene-Coordinator.

The National Contingency Plan was revised in March 1980, which should improve coordination of emergency response efforts. Some of the revisions that should improve the coordination effort include:

1. Increasing the role of State governments and municipalities with major ports and waterways by inviting these entities to be full members of Regional Response Teams.

2. Exploring the possibility of entering into agreements with States to give them spill clean-up responsibility.

3. Making provisions for local Federal contingency plans to deal with spills in ports and local areas. The On-Scene-Coordinator is responsible for developing and maintaining a local contingency plan for his area of responsibility.

4. Requiring a national inventory of equipment and resources available for oil and hazardous substance spill response.

5. Providing a mechanism for the scientific community to provide the On-Scene-Coordinator with sound scientific advice during spills.

6. Requiring each coastal Regional Response Team to conduct annual training exercises in which equipment is deployed, and strongly encouraging each inland Regional Team to conduct annual training exercises.

7. Restructuring the Plan for easier reading by shifting the more important material from its annexes into the body of the Plan, eliminating duplicative material, and clarifying some provisions.

Although actions have been taken to improve coordination of emergency response efforts, to some extent a problem may still exist in communication and coordination of Federal and State response efforts with local communities and carrier, shipper, and other industry organizations. Federal and State organizations and municipalities with major ports and waterways are full members of the Regional Response Team. Through Regional Response Team meetings and training sessions, the members get to know each other and learn the various roles of each agency and how they relate. All local communities and carrier, shipper, and other industry organizations are not members of the Team and do not attend Team meetings because the sheer number of these groups makes this impossible.

The need for improved communication and coordination between the Regional Team and local entities was recognized by one Team during their November 1979 meeting. The Team passed a resolution to develop definite lines of responsibility and coordination of Federal, State, and local agencies, with input of representatives from local agencies, to further the education of local agencies and to improve their understanding of emergency response, their coordination, and their technical knowledge.

The need for better communication and coordination between the Regional Teams and carrier, shipper, and other industry organizations was strongly indicated in a December 12, 1979, letter to the Secretary of Transportation from the National Liquefied Petroleum Gas Association. This letter pointed out the concerns of how the Regional Response Team and On-Scene-Coordinator handled emergency response activities at a train derailment site and the confusion that existed at the site. The letter from the association also asked why an EPA representative (the On-Scene-Coordinator) was given control of the situation, what credentials he possessed which justified giving him this authority, and under what statutory basis he exercised jurisdiction over this matter. This further indicates that industry organizations may not be aware of the Regional Response Teams' role at the scene of an accident or who has the legal authority to assume control.

In a January 9, 1980, letter to the Secretary of Transportation, EPA responded to the gas association concerns by stating that the National Contingency Plan brings together the expertise of numerous Federal, State, and local agencies, with the central theme being the protection of the public. The letter further stated that confusion is part of any emergency operation which assembles officials from Federal, State, and local organizations with various overlapping authorities and interests. It noted that the Plan tasks the predesignated Federal On-Scene-Coordinator with coordination of these various officials and that the designated official exercised his authority to eliminate the threat to public safety and prevent harm to the environment. The letter also pointed out that DOT and NTSB worked closely with the On-Scene Coordinator in determining the potential problems and formulating an appropriate solution. 1/ Nevertheless, the point remains that the gas association representatives were not aware of the integral workings of the Regional Response Team and felt strongly enough to put their concerns in writing.

We also interviewed local fire department officials to determine whether they have experienced, or foresee, any problems in coordinating on-scene activities during a hazardous materials emergency. One county fire department in Maryland had experienced about six major hazardous materials emergencies during 1978 and 1979, including propane fires and chemical

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1/NTSB, in its August 27, 1980, comments on our draft report (see app. III), noted that NTSB did not, nor does it have such authority, take part in determining the extent of the problem or helping to formulate an appropriate solution.

explosions. The fire department's Hazardous Materials Officer stated that if an emergency involves a fire, the fire department commander, rather than Federal or State representatives, has authority to direct the response effort. However, if fire has not broken out and a variety of agency authorities are present at an emergency site, confusion arises as to who has the authority to run the clean-up effort--the local fire department, the Federal On-Scene-Coordinator, or the State operating agency official. The fire department official said a clear line of command should be established so that the average firefighter will know from whom to take orders.

Officials from two other fire departments in Maryland said that they have never had coordinating officials from other agencies arrive at a hazardous materials emergency and try to give directions. These officials said that the fire department has authority in emergency situations involving fire, and that they could not imagine someone trying to preempt their authority.

An EPA official in one region stated that if the Regional Response Team decides to go to the scene of a hazardous materials incident, the On-Scene-Coordinator is probably considered to be in charge of the situation. However, he believes there will be some problems or touchy situations on the question of who is in charge, and there will be a reluctance to tell a local fire chief or police chief that he is no longer in charge of the situation.

Conclusions

The DOT hazardous materials response program has experienced problems in poor communication and coordination efforts between and among Federal, State, and local governments and private industry. DOT, along with the Council on Environmental Quality, has taken certain actions to address these problems. However, the actions primarily center around establishing a one-call National Emergency Response Center and increasing the role of State governments and municipalities with major ports and waterways by inviting these entities to become full members of Regional Response Teams. Actions have not been taken to increase the Regional Response Team roles of other local entities and private industry.

Communication and coordination efforts at the scene of a hazardous materials accident could be improved if all local community and industry organizations were invited to participate as full members of the Regional Response Team. While

we recognize that each community and each industry could not have full membership, they could be represented by city and county government organizations and by industry associations.

Recommendation

We recommend that the Secretary of Transportation, in cooperation with the Chairman, Council on Environmental Quality, establish provisions in the National Contingency Plan to provide for increased roles of city and county government organizations and industry associations by inviting representatives of these groups to participate as full members of the Regional Response Teams.

Agency comments and our evaluation

DOT

In its August 20, 1980, letter, DOT stated that careful consideration must be given to augmenting the Regional Response Teams through full membership of State, local, and industry personnel because of the resource and liability implications involved.

Because State governments and municipalities with major ports and waterways can now participate as full members of Regional Response Teams, and because we are recommending that only representatives of local government organizations and industry associations also be invited to participate, we do not believe that resource and liability implications should act as a deterrent to broadened participation. We continue to believe that such participation would improve communication and coordination at the scene of hazardous materials accidents.

FEMA

FEMA, in its August 18, 1980, letter, commented that a comprehensive effort in the field of hazardous materials will only be achieved by emphasizing State and local capabilities and by creating a continuing working partnership between the Federal Government and State and local governments.

NEED FOR MORE TRAINING AND BETTER DISSEMINATION OF INFORMATION TO IMPROVE EMERGENCY RESPONSE CAPABILITIES

DOT offers a number of training courses and publishes a variety of informational and educational materials for

emergency response personnel. However, volunteer firefighters, representing a major sector of the emergency response system, have received limited training on how to handle hazardous materials emergencies. Further, DOT has not established a program to assure that informational and educational materials are being adequately and consistently distributed to emergency response organizations.

Training available to local emergency response personnel

Advanced training of emergency response personnel must be considered as an integral part of an adequate response system. There are about 35,000 fire departments in the United States with about 2,100,000 firefighters. 1/ Approximately 90 percent of the firefighters are volunteers. In general, the fire departments in major cities have sophisticated equipment and trained personnel to handle most hazardous materials incidents. Consequently, the training effort must concentrate on the volunteer firefighter who may not have the time or resources to devote to a lengthy and expensive training course.

The DOT Transportation Safety Institute in Oklahoma City offers a 2-day emergency response training course for local emergency response personnel such as firemen and highway and law enforcement personnel. The course is designed to train emergency response personnel to identify hazardous materials, what to do in accidents involving them, and coordinating with other agencies in clean-up and disposal operations. The course was first offered in fiscal year 1975, and through fiscal year 1979 a total of about 4,350 emergency response personnel have attended the course.

FHWA offers training in hazardous materials identification and safe evacuation to civil defense, fire, police, rescue squad, and industry personnel. This training is handled by hazardous materials specialists located in field offices. In 1979, 849 sessions were held for 42,450 personnel.

FRA's hazardous materials training programs are conducted in the field for local emergency response personnel and shippers, and include hazardous materials identification and response procedures. There were 16 sessions held in 1979, for 2,000 personnel.

1/ FEMA, in its August 19, 1980, comments on our draft report (see app. II), noted that for planning purposes it estimates the number of firefighters at 1.5 million.

FAA and Coast Guard training sessions are generally designed for safety inspectors, carriers, shippers, and other industry personnel rather than for local emergency response personnel.

In May 1978 DOT began offering a 20-hour self-study training course to local emergency response personnel that covers the characteristics and classifications of hazardous materials, sources of technical information, and situation analysis and decisionmaking. The course is offered through the National Fire Protection Association and costs $350 for instructional material. As of March 1980, about 1,860 units had been distributed.

In January 1980 we visited two county and one city fire departments in one State to determine the number of firemen who had received the 20-hour course on hazardous materials. We found that many firemen had not received this training. One county fire department consisted of 3,500 volunteers and 800 career firemen. Only 495 career firemen, or 11 percent of the combined total, received the training. The other county fire department consisted of 500 volunteers and 400 career firemen. Only the 400 career firemen received hazardous materials training, or 44 percent of the combined total. The city fire department consisted of 2,000 career firemen of which 290, or 14.5 percent, had received the training.

We also visited three local fire departments in another State and also found that many firemen had not received hazardous materials training. One fire department consisted of 45 volunteer firemen and only 6, or 13 percent, had received the training; one consisted of 360 volunteers and 25 career firemen and only 6, or 1.5 percent, had received the training. The other fire department consisted of 105 career firemen and only 55, or 52 percent, had received some hazardous materials training.

The Chairman of the International Association of Fire Chiefs stated that, as a rule, at least 75 percent of the firefighters in a unit should have training in hazardous materials emergency response. He noted that DOT has claimed to have trained 100,000 firemen in hazardous materials emergency response, and had questioned an MTB official as to how this count was determined. He was advised that these 100,000 firemen were not directly trained by DOT, but that the count was based on the assumption that each trained fireman would, in turn, train an estimated 20 more firemen. The Chairman estimated that DOT has directly trained only 5,000 or fewer firemen.

In addition, the EPA Task Force on Environmental Emergencies recognized the limited training of local firemen in their study on Environmental Emergency Response, dated November 1979. The task force stated that State fire training schools with specialized hazardous chemical training reached only a fraction of local firemen. They recommended that EPA and DOT work with the National Fire Prevention and Control Academy (now called the National Fire Academy) to sponsor a training course for local firefighters, and that the course emphasis should include recognizing and identifying hazardous materials/substances and firefighting strategies for different hazardous materials. They also recommended that the training sessions should be directed to rural and small-town fire departments located along heavily used chemical transportation routes.

The National Fire Academy, a part of FEMA's U.S. Fire Administration, currently offers two training courses, (1) Hazardous Materials Fire and Spill Control Management and (2) Pesticide Fire and Spill Control Management. The Academy is also currently developing two additional hazardous materials training courses.

The DOT task force, in their September 1978 report, commented on the need for improving the current programs and techniques used for training firefighters and other emergency response personnel and making information available to them at the scene of an accident. The task force recommended actions be taken to design a training program for part-time and voluntary emergency service personnel and to publish a more comprehensive hazardous materials emergency action guide.

As a result of the task force study, DOT is developing two training programs designed to familiarize part-time and volunteer emergency response personnel with methods for handling hazardous materials incidents. One course is a home-study course for emergency response personnel and is scheduled to be offered in the latter part of 1980. The second course, available as of April 1980, is an 8-hour training session for first-on-scene personnel at radioactive accidents. In addition, the DOT "Emergency Action Guide for Selected Hazardous Materials," which currently provides information on 43 different hazardous materials, is being expanded to provide information on about 1,600 hazardous materials. The guide is designed to help emergency response personnel during the critical first 30 minutes of a hazardous materials accident.

Informational and educational materials

In addition to the above training courses, DOT distributes about 35 different kinds of informational and educational materials. These materials are distributed at trade association meetings, training sessions, and other events. During 1979 MTB distributed over 1,021,830 of these materials in response to about 6,950 requests.

DOT has prepared a list of educational institutions, companies, associations, and Government agencies that offer courses and seminars concerning hazardous materials. The listing became available in August 1978 and by the end of 1979, DOT had distributed about 445 copies.

DOT also publishes a bimonthly Hazardous Materials Newsletter which includes a section on workshops and training seminars, including emergency response courses. The newsletter is sent to about 10,000 carriers, shippers, police and fire departments, and other parties that have requested the newsletter. Since there are about 35,000 fire departments in the United States, DOT may be reaching only a small portion of those local emergency response organizations that could benefit from the information in the newsletter.

The International Association of Fire Chiefs has been critical of DOT's dissemination of educational information to emergency service personnel. During Federal hearings in April 1978, the Association Chairman stated that although DOT publishes a large volume of training and informational material, it does not publish a list of available material so that fire personnel can order it for use in their training programs. He suggested that a list of these publications distributed to the fire service press would be of assistance.

An MTB official acknowledged that a comprehensive list of all MTB hazardous materials informational literature is not available to the public. A list has not been developed because MTB believes it is not needed. The official stated that MTB now receives more requests for information from many sources, including fire departments, than they can accommodate and could not possibly satisfy all the requests they would receive if a list was published.

In May 1980 we talked to the Chairman of the International Association of Fire Chiefs, to determine whether he had noted any improvement in DOT's distribution of informational and educational materials to emergency response organizations. The Chairman stated that the availability of DOT emergency response information is essentially the same as he described during the April 1978 testimony. He stated

that although DOT has a wealth of emergency response publications and training information, there is no effective distribution system to disseminate this information. He suggested that DOT could compile a listing of hazardous material pamphlets and training courses for distribution to the six to eight fire service organizations which, in turn, would willingly publish the list in their periodic newsletters. He estimated that 80 percent of the fire departments in the United States have membership in one or more of these fire service organizations.

Although DOT has developed informational and educational materials that could be very useful to emergency response personnel, especially volunteer fire departments, there is no system to assure that adequate and consistent distribution is being made to those organizations that could realize the most benefit from the material. DOT does not have a comprehensive mailing list of emergency response organizations or any other method of assuring adequate distribution of training information.

Another informational aid to emergency response teams is the labeling and placarding of hazardous materials packages, containers, motor vehicles, and rail cars as required by CFR 49. Such labeling and placarding helps identify the category of hazardous materials being transported so that in the event of an incident, emergency response personnel will have some knowledge of the material involved.

The labeling and placarding system, however, has come under considerable criticism. Emergency response personnel complain that the system identifies only the hazardous materials category, such as poison, flammable, combustible, corrosive, etc., and does not provide enough information to emergency response teams to decide what actions to take. To make matters worse, many hazardous materials that require the same type of label or placard may require an entirely different type of emergency response action. For example, bromine and titanium tetrachloride both require a corrosive placard but, in case of fire and release of the material, they require entirely different response actions. For one material the fire may be put out with water; for the other, water should not be used.

We interviewed emergency response personnel in 11 local communities and there was almost unanimous agreement that the system for placarding dangerous cargo needs to be improved. They stressed that their approach to a hazardous materials incident should be determined by the placards found on the vehicles involved. As such, it is very important to

have a simple, uniform system and a staff sufficiently familiar with it to respond instantly and correctly.

DOT has long recognized problems in the labeling and placarding system, and since August 1968, has published in the Federal Register several proposals for improvements, including the use of a numerical identification system. The purpose of the numerical system is to aid emergency response personnel to quickly identify specific hazardous materials, identify the type of response actions required, and assure accurate transmission of information to and from accident sites.

In June 1979 DOT again proposed rules for a numerical identification system. DOT believed that adopting the proposed system would be a vital step in improving emergency response capabilities, and that the proposed system would be compatible with all types of transportation worldwide and could be applied to both bulk and nonbulk shipments.

On May 22, 1980, DOT adopted the numerical identification system. The regulations stipulate that a 4-digit identification number be displayed on shipping papers, placards, and panels used on portable tanks, cargo tanks, and tank cars by July 1, 1981, and on packages containing hazardous materials by July 1, 1983.

Conclusions

DOT has developed training courses and information and educational materials that could be very useful to emergency response personnel. However, DOT needs to assure that those organizations that could realize the most benefit from this material are aware of its existence. Generally, fire departments in major cities have the equipment and trained personnel to handle most hazardous materials incidents. Volunteer fire departments, which have the lowest percent of trained personnel, could realize the most benefit from this material.

The revisions to the labeling and placarding system should significantly aid the first emergency response personnel arriving at the scene to identify the hazardous materials involved and the type of response actions to take. However, for the system to be effective, all emergency response organizations and groups at the Federal, State, local, and industry levels must be aware of the benefits of the system and how to properly use the system. Consequently, it is imperative that DOT establish a complete mailing list of concerned parties and launch an awareness program to assure maximum benefits from the system.

Recommendations

We recommend that the Secretary of Transportation direct the Director of MTB to

--Develop a comprehensive list of available hazardous materials training courses and information and educational materials to be distributed through appropriate channels to emergency response organizations.

--Develop a method to assure that adequate distribution is made of lists of available hazardous materials training courses and information and educational materials. Consideration should be given to developing a comprehensive mailing list of emergency response organizations, particularly volunteer fire departments, or seeking the assistance of the major fire service organizations to distribute the information through their periodic publications.

--Periodically update this list of hazardous materials information in the DOT bimonthly Hazardous Materials Newsletter, and assure that adequate distribution of the newsletter is made to emergency response organizations.

We also recommend that the Secretary take appropriate steps to implement an awareness program to assure maximum benefits from the revised labeling and placarding identification system. Such a program should assure that all emergency response organizations and concerned groups at the Federal, State, local, and industry levels will become aware of, and learn how to properly use, the system. Adopting the above recommendations would help disseminate this information.

Agency comments and our evaluation

DOT

DOT, in its August 20, 1980, letter, agreed with our recommendations regarding the need to expand the availability of hazardous materials safety information and stated that plans have been made in budget submissions to substantially increase this effort. We believe that such an effort is important to increasing the effectiveness of emergency response to hazardous materials incidents.

FEMA

In its August 18, 1980, letter, FEMA agreed that developing a comprehensive mailing list of emergency response organizations or any other method of assuring adequate distribution of training information would be invaluable.

APPENDIX I

U.S. Department of Transportation
Office of the Secretary of Transportation

Assistant Secretary for Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

August 20, 1980

Mr. Henry Eschwege
Director
Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

I have enclosed two copies of the Department of Transportation's (DOT) reply to the General Accounting Office (GAO) draft report, "Transporting Hazardous Materials - Safety Programs Need Improvement," dated July 18, 1980.

While the Department agrees with much in the GAO report, it objects to the unbalanced approach used by GAO from which it concluded the regulatory, inspection, and response programs are inadequate without examining Federal efforts to mitigate problems inherent in the programs. DOT feels that without adequate analysis the cost effectiveness of several of GAO's program recommendations is questionable. It should also be noted that DOT's hazardous materials programs received significant funding increases in several areas in FY 1981 and additional program growth in priority areas of enforcement, training, and State/local cooperation is envisioned in FY 1982.

Please let us know if we can be of further assistance.

Sincerely,

for Edward W. Scott, Jr.

Enclosures

APPENDIX I

DEPARTMENT OF TRANSPORTATION REPLY TO GAO DRAFT REPORT OF JULY 18, 1980 ON TRANSPORTATION HAZARDOUS MATERIALS SAFETY PROGRAMS NEED IMPROVEMENT

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

GAO observes that while the American public's primary assurance that is is being protected from the risks associated with transporting hazardous materials - over 250,000 shipments per day -- is the Federal program administered by the DOT, the following improvements are needed to effectively carry out this program:

--Obtain better data regarding the hazardous materials industry, improve the Department's hazardous materials information system, and better evaluate the risks associated with transporting these materials.

--Establish a systematic basis for selecting companies for inspection, develop guidelines for determining when violations are to be prosecuted, and encourage States to expand their inspection and enforcement efforts.

--Improve coordination of emergency response efforts with local governemnt organizations and industry associations and ensure better dissemination of information to local emergency response organizations.

GAO states the purpose of the review was to provide the Congress with an assessment of DOT programs to promote the safe transportation of hazardous materials.

SUMMARY OF DEPARTMENT OF TRANSPORTATION POSITION

While the Department agrees with much in the GAO report, it objects to the unbalanced approach used by GAO from which it concluded the regulatory, inspection, and response programs are inadequate without examining Federal efforts to mitigate problems inherent in the programs. DOT feels that without adequate analysis the cost effectiveness of several of GAO's program recommendations is questionable. It should also be noted that DOT's hazardous materials programs received significant funding increases in several areas in FY 1981 and additional program growth in priority areas of enforcement, training, and State/local cooperation is envisioned in FY 1982.

POSITION STATEMENT

GAO has made twelve (12) recommendations in the areas identified in the Summary of GAO Findings and Recommendations. DOT will offer comments below for each of the recommendations to which we have assigned a number in the order of their appearance in the report.

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Recommendation No. 1, Page 15:

While we agree that a universal registration program would provide a better data base, we are concerned that GAO did not give adequate consideration or focus on both the costs and benefits of such a program. We do not believe that existing resources would support a registration program for all shippers, carriers and manufacturers, nor do we think it would be feasible under the current paperwork reduction policies of the Administration. The report does not indicate whether OMB was asked to comment on this GAO recommendation. We suggest that a thorough cost-benefit analysis would have to be made before serious consideration is given to this recommendation.

Recommendation No. 2, Page 25:

We agree that a study should be undertaken to determine ways in which the incident reporting system could be made more complete, accurate, and useful to DOT elements and the public. As part of the Secretary's requirement for the development of a centralized hazardous information system, which is now an ongoing program, DOT will be carefully examining the incident reporting system with the objective of its improvement.

Recommendation No. 3, Page 26:

We do not agree that the incident reporting requirement should be extended to all shippers, carriers, and manufacturers. DOT authority is restricted to shipments involving transportation. Both shippers and manufacturers who are also shippers would have reportable incidents sent to the DOT by the transporting carrier. To require the shipper to also report incidents would duplicate the reports from carriers in the transportation environment. Incidents affecting shippers or manufacturers in a non-transportation environment would more properly be reported to EPA or OSHA. It should be observed, too, that there are many more shippers than there are carriers, and the additional reporting burden placed upon both the shippers and the DOT has not been considered by GAO from a cost-beneficial viewpoint.

Recommendation No. 4, Page 26:

It has always been the objective of DOT to accurately and completely indicate in its annual report the extent of any problems associated with the transportation of hazardous materials. With regard to the issue of timeliness, the present act provides four months for modal data collection, report preparation, coordination within DOT and OMB, and final submission. The Department strives to meet the report submission date of May 1 each year and will continue its efforts to comply with that tight time frame.

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ABBREVIATIONS

CHEMTREC	Chemical Transportation Emergency Center
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GAO	General Accounting Office
MTB	Materials Transportation Bureau
NRC	Nuclear Regulatory Commission
NTSB	National Transportation Safety Board

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Recommendation No. 5, Page 32:

With respect to the development of risk profiles for hazardous materials carriers and shippers, much of what we would prefer to call risk evaluation is being done by the modal administrations. The work within FRA and the USCG is nearly done, while FHWA, RSPA, and FAA have work either planned or underway. We do not agree, however, that a risk profile system should be developed which could constitute a government "blacklist" and which could be obtained under the Freedom of Information Act.

Recommendation No. 6, Page 32:

We agree that working with State and local officials in connection with the routing of hazardous materials shipments would be beneficial. FRA has already studied the advantages and disadvantages of routing rail shipments, and the Coast Guard has spent considerable time in the proper handling of ships containing hazardous materials as they leave and enter ports. RSPA and FHWA has just concluded a series of hearings around the country in connection with a proposed rulemaking for highway routing radioactive materials where extensive communication has taken place with representatives from State and local governments, industry, and the public. Much has been learned about the complex issues involved in routing decisions which will be applied to future actions involving other hazardous materials.

Recommendation No. 7, Page 50:

We agree that a need exists to work with the States in developing and implementing comprehensive plans to expand State roles in the enforcement of the hazardous materials regulations. The DOT, of course, is already involved in this area and plans to increase our involvement as resources become available.

Recommendation No. 8, Page 53:

We agree that a systematic risk evaluation procedure should be developed to assure that Federal hazardous materials inspection programs can effectively be targeted to those hazardous materials problem areas representing the greatest risk to public safety. Programs are presently underway to accomplish this objective. We believe a balanced inspection program, however, is preferable to emphasis being placed on shippers.

Recommendation No. 9, Page 57:

We agree with the need to coordinate the formulation of uniform guidelines which can be used by field inspectors to determine when suspected violations can be developed into enforcement cases. The Secretary has assigned this responsibility to the Office of the General Counsel and work is underway to achieve this objective.

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Recommendation No. 10, Page 67:

DOT is now augmenting its capability in the emergency response area through a joint arrangement between CHEMTREC and the U.S. Coast Guard. Efforts are being made to seek the active cooperation of State and local governments. Careful consideration must be given, however, to augmenting the Regional Response Teams through full membership on the teams by State, local, and industry personnel because of the resource and liability implications involved.

Recommendation No. 11, Page 74:

We agree that there is a need to expand the availability of hazardous materials safety information and training to emergency response organizations. Plans have been made through budget submissions to substantially increase this effort.

Recommendation No. 12, Page 74:

DOT concurs.

FEDERAL EMERGENCY MANAGEMENT AGENCY
Washington D C 20472

August 18, 1980

Mr. Henry Eschwege
Director
Community and Economic
Development Division
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Attached are the Federal Emergency Management Agency comments on the proposed report to the Congress entitled "Transporting Hazardous Materials--Safety Programs Need Improvement."

While several specific recommendations are offered regarding ChaptersOne, Two, and Three, our comments primarily deal with Chapter Four and the perceptions of the Federal Emergency Management Agency in the coordination of Federal preparedness planning, mitigation, response and recovery efforts for the emergencies and disasters.

Additionally, I believe it imperative that we continue to exert our combined efforts to assure the full participation of State and local governments in all hazardous materials activities, plans and response actions.

Sincerely yours,

John W. Macy, Jr.
Director

Attachments

COMMENTS ON THE DRAFT GAO REPORT
"TRANSPORTING HAZARDOUS MATERIALS -
SAFETY PROGRAMS NEED IMPROVEMENT"

Our comments on the subject report fall into two categories. The first includes comments on Chapters One through Four and deals with general reactions or specific factual information which may have impact on the report. The second focuses on specific comments with regard to Chapter Four, "Emergency Response Organizations", because the Federal Emergency Management Agency has been mandated, through Executive Order 12148, to provide comprehensive emergency management including coordination, preparedness, planning, training, mitigation, response and recovery.

General Comments

(1) Although the report focuses on the Department of Transportation, it raises the emerging perception of a national problem much larger than the authorities and activities of that single Federal agency. Currently, although over thirty pieces of legislation impact on the field of hazardous materials and hazardous waste, there is a general consensus that not one, or all thirty collectively, comprehensively cover the problem. There are other legislative proposals being considered by Congress which (in several versions in both houses) are popularly known as "Superfund" and are designed to take a comprehensive approach. Passage of "Superfund" legislation will dramatically impact on all areas discussed in the draft report including authorities of Federal agencies other than the Department of Transportation and revision of the National Contingency Plan.

(2) Chapters One, Two, and Three of the report note that DOT lacks funds and personnel to perform its assigned tasks. This is, of course, a common complaint of Federal line agencies. While FEMA agrees with the recommendations in these chapters, we also believe that no program to deal with a national problem of this magnitude can be successful without the involvement and full participation of State and local governments.

FEMA's position is that a comprehensive effort in the field of hazardous materials will only be achieved by emphasizing State and local capabilities and by creating a continuing working partnership between the Federal Government and State and local governments.

The State of Tennessee presents a good example. Tennessee has developed a program to cope with the volume of hazardous materials and hazardous waste which passes through its boundaries. Through its Department of Emergency Services, the State has a response center with 24 hour capability, trucks outfitted with necessary equipment, and trained personnel to deal with spill situations.

Under these circumstances, a Federal presence would be required only when the situation was of such severity as to exceed State and local capabilities.

In conclusion, the transportation of hazardous materials is but a single element in a continuum of related technological hazards requiring emergency preparedness capabilities at all levels of

government. Although State and local agency roles remain the same under pending legislation, the responsibilities of agencies at the Federal level are or will be changing.

(3) FEMA supports the registration of hazardous materials shippers, including the identification of operating facilities and the materials shipped, although the required data base will be large and difficult to keep current and manage. The report could emphasize the value of this information in the development of response plans and the strategic location of State and local response teams and equipment, rather than only the inspection targeting emphasis.

(4) On May 22, 1980, the Materials Transportation Bureau (MTB) of the U.S. Department of Transportation (DOT) issued 6 new regulations under the 1974 Hazardous Materials Transportation Safety Act. Docket HM-126A of the final regulation requires transporters of hazardous materials to display the international hazardous material identification numbers previously adopted by the United Nations Committee of Experts on the Transport of Dangerous Goods (UNCE) on their shipments. The regulations stipulate that the 4-digit UNCE identification number be displayed on shipping papers, placards, and panels used on portable tanks, cargo tanks, and tank cars by July 1, 1981 and on packages by July 1, 1983.

(5) FEMA supports the position taken in the report that industry activity should be examined and evaluated for its applicability

to Federal, State and local program coordination, particularly in connection with emergency response. Secondly, a basic dichotomy exists when the Federal agency which responds to any incident is also in the position of regulating and therefore litigating against that industry. Further, since the industry may be a major source of information in dealing with a specific emergency situation, a clear conflict of interest arises on both sides.

Also, industry safety and training programs undertaken by chemical and transportation firms for their own personnel or for personnel from the public sector are important elements in assuring a comprehensive planning effort.

APPENDIX II

COMMENTS ON CHAPTER FOUR
"EMERGENCY RESPONSE ORGANIZATIONS"

(1) Our major recommendation regarding Chapter Four is that more attention be given to comprehensive emergency management and the responsibilities of State and local institutions.

Chapter Four of the draft report on transporting hazardous materials appears to rely on Section 311(c) (2) of the Clean Water Act. Although the Federal Emergency Management Agency as well as 11 other agencies are specifically identified, the implications of Reorganization Plan #3 and Executive Order 12148 as they relate to coordination, planning, public information, training and education, emergency medical services, and preparedness for comprehensive emergency management could be further expanded.

Chapter Four of the draft accurately describes the circumstances which caused Reorganization Plan #3 to be developed and implemented. Depicted in the report are: (1) the Federal Government taking up a problem belatedly; (2) several Federal agencies sending technical information and guidance to States and their political subdivisions; (3) several "hit or miss" training programs conducted at Federal expense; (4) the creation of a structure in a Federal line agency to "coordinate" eleven other line agencies with little regard for field requirements or duplication of existing emergency management systems.

(2) On P. 59, the 2nd paragraph should be revised. The National Response Team does not revise the National Contingency Plan;

rather, this is done by the Council on Environmental Quality. The NRT makes recommendations. In addition, the Plan, of itself, does not evaluate but provides for the evaluation of agency preparedness.

Further while the Plan provides for the delegation of responsibilities, FEMA feels that these delegations are not specific and the lines of authority between the National Response Team, the Regional Response Teams, and the On-Scene Coordinator remain unclear.

(3) On P. 59, paragraph 3, the language should indicate that the National Contingency Plan provides for development of local Federal contingency plans, not local contingency plans.

(4) On P. 60, the 3rd paragraph should stipulate that the Federal Emergency Managment Agency is the focal point and coordinator in the Federal structure for all emergency management planning, response, and preparedness activities and that FEMA is continually involved with hazardous materials emergencies through its presence on the National Response Team and the Regional Response Teams. Also, the material should indicate that the U.S. Fire Administration and the Federal Insurance Administration are part of FEMA.

FEMA's non-Federal constituencies include State and local emergency management organizations. Accordingly FEMA can assist in the coordination of Federal activities by aligning

them with existing networks of emergency management organizations and personnel.

(5) On P. 60, the comments pertaining to the "State and local Emergency Response Organizations" are clearly accurate but FEMA suggests that a further recommendation should be made. More attention should be given to reliance on State and local capability. It should also be noted that the State and local contingency plans outlined in this section are developed on the State and local level for their use.

(6) On P. 61, the 3rd paragraph should be modified to reflect that the number of generic chemicals in the Chemtrec System is between 2,000 and 3,000 rather than 18,000. The difference in these numbers represents variations in trade names.

(7) On P. 63, the statements should indicate that Chemtrec does not provide detailed response information. The personnel that answer the phones are not technical and they limit their response to their data sheets. Their principal service is to put the caller in touch with the shipper who can then provide the technical advice. It should be emphasized that this arrangement has been severely criticized by State and local officials as being too slow.

(8) On P. 64, it should be noted that while coordination is emphasized, the On-Scene Coordinator is responsible for a local Federal contingency plan. He does not have the authority to specify State and local response capability or responsibility.

(9) The material included from the first paragraph on page 65 through the second paragraph on page 66 should be modified. The legal roots of the NRT are in Section 311 of the Clean Water Act and specifically deal with spills of particular substances into navigable waters. All other spills are covered under Section 504 of the same Act which has never been funded and hence never implemented. It is questionable whether the NRT can intervene at all in spills that do not affect navigable waters--this has been one of the major arguments for the "Superfund" legislation. It should be made clear that the NCP does not give the OSC the right to pre-empt State and local efforts. I quote from CEQ comments published as a preface to the newest NCP revision in the Federal Register, Wednesday, March 18, 1980, page 17836:

> "The International Association of Fire Chiefs expresses concern that the Plan unduly and excessively interfered with local agency authority to control and supervise spill response efforts, particularly with respect to responses by local fire and civil defense officials. A number of changes were made in response to this criticism in order to highlight the importance of coordination with local officials and to emphasize that the Plan covers only the Federal response. See &&1510.23(a), 1510.34(f), 1510.36(d), 1510.37(a)(1) and 1510.42(a). Concern was also expressed that &1510.57(a) authorizes the OSC to keep the fire chief and civil defense officials out of the affected area. That section is not intended to give the OSC such authority.

Local contingency plans, particularly with the cooperation of local fire and civil-defense officials, are to be developed in a manner consistent with local fire and disaster plans and requirement. See §1510.42(a)."

Regarding matters pertaining to overall coordination and the responsibility for the response phase of a spill, please see the attached letter from John W. Macy, Jr., Director of FEMA to Gustave Speth, Chairman of the Council on Environmental Quality.

(10) On P. 65, the first paragraph needs clarification. The industry is fully aware of the role of the RRT and the OSC. Their letter questioned the legality and validity of that role, not as written into the NCP but as it was actually performed.

(11) On P. 65, the 2nd paragraph, the plan tasks the Federal On-Scene Coordinator with coordination of the Federal response, not the "coordination of these various officials."

(12) On P. 68, for planning purposes, the FEMA Fire Administration has been placing the number of firefighters at 1.5 million.

(13) On P. 70, 1st paragraph, the National Fire Prevention and Control Academy has been renamed the National Fire Academy and is part of the U.S. Fire Administration, an element of FEMA.

The National Fire Academy should also be mentioned on page 68 under "Training Available." The mission of the National Fire Academy (NFA) is to train the nation's fire services through its residential program and its outreach program in cooperation with the State fire training programs.

The NFA currently offers two courses, (1) Hazardous Materials Fire and Spill Control Management and (2) Pesticide Fire and Spill Control Management. Two additional courses, Hazardous Materials I and II, are under development.

(14) On P. 72, the 2nd paragraph contains a statement that DOT does not have a comprehensive mailing list of emergency response organizations or any method of assuring adequate distribution of training information. FEMA agrees that such a listing would be invaluable.

FEDERAL EMERGENCY MANAGEMENT AGENCY
Washington D.C. 20472

Honorable James Gustave Speth
Chairman, Council on Environmental Quality
722 Jackson Place, N. W.
Washington, D. C. 20006

Dear Mr. Chairman:

I am writing in regard to the authority delegated to the Council on Environmental Quality under Executive Order 11735 (August 3, 1973) for the preparation, publication, revision or amendment of a National Contingency Plan for the removal of oil and hazardous substance discharges. Specifically, I hereby request revision of Section 1510.36 and other applicable sections of the National Oil and Hazardous Substances Pollution Contingency Plan pertaining to the duties and responsibilities of the predesignated Federal "On-Scene Coordinator" (OSC). Allow me at this point to provide some background on the issues here and clarify the reasons for my request.

On May 7, 1980, I received a letter from Warren E. Isman, Chief of the Montgomery County, Maryland, Fire Department and Chairman of the Hazardous Materials Committee of the International Association of Fire Chiefs (IAFC). Chief Isman's letter expressed the concern of the IAFC over the potential for problems between the fire service and Federal agencies at the scene of a hazardous materials incident. Included with the letter was a document prepared by the Hazardous Materials Committee of the IAFC entitled, "Fire Department and Federal Response Interaction at the Scene of a Hazardous Materials Incident." This document is extremely critical of the existing mechanism, the National Contingency Plan, which in the absence of proposed "Superfund" legislation, has attempted to form the basis for Federal action to minimize pollution damage from discharges of oil or hazardous substances.

The primary criticism of the Fire Chiefs concerns the Federal OSC provided for under Executive Order 11735 and defined in the National Contingency Plan. The Fire Chiefs assert that the OSCs have been assuming total control of an incident, pre-empting the authorities of local government officials and emergency service personnel. The Federal Emergency Management Agency (FEMA) has raised this issue several times in the past in an interagency context. On these occasions the issue was not resolved due to differences in interpretation and implementation of Federal responsibilities as defined in the Plan.

While the Plan provides that the OSC is to coordinate and direct the Federal response to spills and discharge removal efforts, and there appears no statutory authority for pre-emption of other responsible parties, the role of the OSC has expanded to the point where that Federal official is in many instances assuming total control over all personnel at the scene of an incident. This expansion of power is of great concern to State and local government officials, local emergency service departments, and other non-Federal personnel with some responsibility at the scene of a hazardous materials incident, and they have complained about it to FEMA on numerous occasions.

FEMA has attempted to resolve this problem in several ways. FEMA is a member of the National and Regional Response Teams provided for in the Plan, and we have raised the issue to other team members, highlighting the concerns of the non-Federal personnel who constitute the first line of response in any peacetime emergency situation. To date, however, neither the National or Regional Response Teams nor the Council on Environmental Quality has been willing to redefine the role and responsibilities of the predesignated OSC to accommodate the concerns of State and local emergency response organizations. Comments by the IAFC and FEMA in regard to this issue were not, in our estimation, sufficiently addressed in the final revisions to the Plan published in the Federal Register on March 19, 1980.

Federal policy for any non-war emergency situation is that primary responsibility for preparedness and response rests with State and local governments and emergency response personnel. Preparedness planning for and response to hazardous material emergencies is not so unique that the Federal Government should automatically assume that such an emergency is beyond the capabilities of the affected State and local government. In fact, in the case of natural disasters, Federal assistance is provided only upon the request of a governor and approval by the President. Despite tangential provisions in the Plan that State and local governments actively participate in decisions of the Regional Response Teams which offer advice (which may or may not be accepted) to the OSC, the dichotomy between the traditional Federal stance and the oft-times pre-emptory authority of the Plan has drawn considerable attention.

In its paper, the IAFC stated the following: "When other State or Federal agencies arrive on the scene, they should report to the incident commander at the command post and provide advice and technical support. They should not be permitted to assume control of the incident." While I feel that complete local control is as impractical and undesirable an extreme as Federal pre-emption, I do favor increased cooperation and respect among all parties on scene so as to be more in line with the interagency and intergovernmental coordinating mechanism provided for by the Plan.

I would welcome the opportunity to discuss this issue with you further, with the objective of developing a better mechanism for assignment of roles and responsibilities of those agencies responding to hazardous materials incidents. It might be, given the tendency for Federal personnel to assume the lead role, that the National Contingency Plan should be revised. However, providing better guidance to response personnel might be a more appropriate way to insure that each party responding to an incident provides the most effective and complementary form of assistance, whether advisory or operational, to mitigate the consequences of the incident.

I look forward to hearing from you.

Sincerely yours,

John W. Macy, Jr.
Director

APPENDIX III

National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

August 27, 1980

Mr. Henry Eschwege
Director, Community and Economic
Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for the opportunity to review and comment on the proposed report to the Congress entitled "Transporting Hazardous Materials -- Safety Programs Need Improvement."

We believe the findings and recommendations contained in this report identify many of the major improvements which are needed in administering the Department of Transportation's (DOT) existing regulatory program to assure the safe transportation of hazardous materials. The issues discussed in the report are significant and support many past Safety Board actions. Recently, the Safety Board has been focusing its attention in this transportation safety area on the need to increase the responsibility of shippers for the routing, containment, and emergency response activities related to the transportation of hazardous materials. These activities are not addressed by regulations. Thus, it is possible that measures in addition to those proposed in your draft report may be needed to improve safety in this field.

With respect to the text of the report itself, we offer the following comments:

On page 2, the report states that 18 USC 831-835 provides coverage of hazardous materials transportation. 18 USC 831-835 was repealed November 30, 1979 by P. L. 96-129.

On page 21 of the proposed report, reference is made to the way NTSB counts injuries in hazardous materials accidents. The Safety Board counts all injuries which receive medical treatment as a result of such accidents. It would therefore clarify the report if the sentence read, "NTSB, on the other hand, counts all injuries sustained as a result of the incident which involve medical treatment, whether or not..."

APPENDIX III

Incident data, discussed in the report beginning at page 19, is addressed in a recent Safety Board report, "Survival in Hazardous Materials Transportation Accidents" (NTSB HZM-79-4). In that report, the data issue is treated from a different perspective. A copy of the report is enclosed for your review. Also, in 1979 the Safety Board started publishing hazardous materials spill maps describing the time-sequenced behavior of hazardous materials released during accidents; the maps describe the locations of fatalities and the severity of the injuries resulting from the hazardous materials releases. This kind of information is needed to support the risk determinations and evaluations discussed on pages 29 through 33 of the proposed report. Such data can also be used to evaluate and update advice published in DOT's "Emergency Action Guide," which is distributed to emergency services.

On page 65 of the proposed report, an Environmental Protection Agency letter is quoted as stating that "DOT and NTSB worked closely with the On-Scene Coordinator in determining the potential problems and formulating an appropriate solution." That statement is not accurate. The NTSB accident investigators were at the scene as part of the Safety Board's efforts to determine the probable cause of the accident and to make recommendations to prevent recurrences of similar accidents. However, while our investigators were in contact with the Federal On-Scene Coordinator, they did not (nor does the Board have authority to) take part in determining the extent of the problem or helping to formulate an appropriate solution.

Thank you again for the opportunity to review and comment on the proposed draft.

Sincerely,

James B. King
Chairman

Enclosure

APPENDIX IV

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 18 1980

OFFICE OF
PLANNING AND MANAGEMENT

Mr. Henry Eschwege
Director, Community & Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

The Environmental Protection Agency (EPA) has reviewed the General Accounting Office (GAO) draft report entitled "Transporting Hazardous Materials--Safety Program Needs Improvement." The report is addressed to the Department of Transportation and EPA has no comments on its specific recommendations. We are concerned, however, over apparent omissions in the discussion introducing Chapter 4.

Chapter 4 makes no mention of the Federal (EPA and Coast Guard) role in the cleanup of oil and hazardous substance spills. Both EPA and the Coast Guard emergency response functions are centered around the use of funds from section 311(k) of the Clean Water Act to mitigate or cleanup spills which enter or threaten to enter United States waters.

The report fails to recognize that the primary reason for the presence of the Federal On-Scene Coordinator (OSC) is to monitor response activities and whenever necessary cleanup spills which the spiller or State and local officials are unwilling or unable to cleanup in a manner which protects the environment. The OSC is also concerned with the environmental affects on the public health and safety as well as the commercial impacts.

We believe the report should recognize the roles EPA and the Coast Guard have in the cleanup of hazardous materials and appreciate the opportunity to comment on the draft report.

Sincerely yours,

William Drayton, Jr.
Assistant Administrator for
Planning and Management

for

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